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THE JOURNAL

OF THE

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AUGUSTA, GA., MAY, 1917

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VITAL STATISTICS.*

By Dr. Emory R. Park, LaGrange, Ga.

Much has been written, and a great deal said, in regard to Georgia's collecting Vital Statistics, but so far very little has been done.

In the spring of 1914 quite a good deal of enthusiasm was worked up on this subject. Some of the newspapers almost went into hysterics over the proposition and the Georgia Chamber of Commerce, the Women's Federated Clubs, and the Georgia Medical Association all were clamorous for a Vital Statistics Law—these made their moves, apparently in the open, and besides these it is altogether possible that some secret influences were brought to bear by concerns that had selfish motives in view. As a result of all this the legislature in the summer of 1914 actually passed a law which is, through courtesy, called a Vital Statistics Law.

During that same spring the matter of passing a law creating County Boards of

Health and County Health Commissioners was also being brought forward, and hereby hangs a tale—for the State Board of Health made some investigations and was informed, on what was reasonable to believe was reliable authority, that it would hardly be possible to get both the Vital Statistics and the Public Health propositions enacted into law at the same session. Acting on this authority and on the profound conviction that the Public Health Act was the more valuable of the two measures, the State Board of Health instructed their publicity representative to boost the Public Health Act. Ever since then, from time to time, some one has tried, in public print and otherwise, to make it appear that the Board was not in favor of a Vital Statistics Law. This, I can assure you, is contrary to the facts in the case. The State Board of Health has never opposed the collection of Vital Statistics other than to say that if a choice between the adoption of the act providing for County Boards of Health and the one providing for Vital Statistics, that the County Board of Health was the more likely to accomplish the purposes for which public health work is undertaken. Under the circumstances the Board could not have, in honor, taken a different course. One

*Read at Meeting Association of State and Municipal Health Officers, Augusta, April, 1917.

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of the prime objects in creating the State Board of Health was in order to have some capable body to appeal to for advice upon matters pertaining to the public health. The Board was merely doing its duty and carrying out one of the essential purposes for which it was created when it advised the people that if a choice had to be made between these two laws, the Public Health Law was the one which would be of the greatest benefit to the physical well-being of the State.

In due course of time the legislature got together and in the whirligig of politics, lo and behold! both acts were made into law. These things were done in the summer of 1914. Since then the Board has done what it could with the extremely limited means at hand to get the Ellis Public Health Law adopted in all of our 152 counties. Here and there a county has taken hold of it and the work of actually preventing disease is going forward in an energetic manner in such places. It is the desire of the Board that this work shall go forward as rapidly as possible.

As to the Vital Statistics Law, nothing has or can be done in the direction of collecting the data which it contemplates, for the simple reason that neither the legislature, which passed it, nor those which have followed it ever appropriated one penny for its maintenance.

One may say that the legislature's labor was in vain since the child it brought forth was born dead. One may go further and say, without transgressing the bounds of truth, that not only was the foetus born dead, but it was actually decomposed in some of its parts.

A remarkable point in this connection is the fact that those who stood as godmother and father at this legislative accouchement have never appeared to be very much perturbed over the fact that the child was still-born. It is true that from time to time since then there has arisen one here and there who has accused some one else of having been guilty of the infanticide, but so far as any one getting busy with a pulmotor it simply hasn't been done.

Some have tried to put the blame on the State Board of Health, saying that if it would ask for the necessary funds with which to operate the law, that the funds would be forthcoming. This position, however, is not tenable, since the Board has on more than one occasion made such a request and has

had it flatly denied. Besides this it is hardly fair to try to dump the blame on some one else's shoulders. Many of the legislators who passed the bill in 1914 were still legislators in 1915. These knew that they had passed such a law and that they had not made any financial provision for it. It was up to these men to correct the mistake they had made.

However, it does not accomplish anything to point accusing fingers at some one else. What we all should do is to get together and work harmoniously in the direction of having the existing defect in the matter of appropriation corrected. As to the existing undesirable provisions in the law—at a previous meeting I called attention to quite a number of these and I believe that they are of such a nature as to almost nullify all the good such a law is capable of, unless they are corrected. I am herewith, on that account, presuming to again point them out.

As it is necessary for a private corporation to have capital before it can begin work, so is it also necessary for a state department to have funds before it can begin to operate. My first suggestion is, therefore, that money be provided and in sufficient quantity to enable those in charge to secure a suitable place—there are no vacant quarters in the capitol now—in which to carry on the work, to obtain reasonably good working equipment, and to employ workmen possessed of skill and intelligence. Since the present law does not provide any funds at all, it has been, of course, impossible to begin the work, and if only small amounts are provided in the future, the amount and value of the output will be to a great extent proportionately small.

I wish now to read you Section 3 and a part of Section 4, of the present law:

"Section 3. That for the purposes of this Act the State shall be divided into registration districts, as follows: Each city, each incorporated town and each militia district shall constitute a separate and distinct registration district.

"Section 4. Be it further enacted by the authority aforesaid, That in the cities the city clerk shall be the local registrar, and in the incorporated towns the town clerk shall be the local registrar, and that in the militia districts of the State, the justices of the peace and notary publics and ex-officio justices of the peace shall be the local registrars, and for that portion of the militia districts out-

side of the cities and incorporated towns therein, the justice of the peace and notary public and ex-officio justice of the peace shall be the local registrars under the terms of this Act. Should there be no justice of the peace or notary public or ex-officio justice of the peace in any militia district, or should both of said officials be absent from their district, in that event, the justice of the peace or ex-officio justice of the peace for any adjoining militia district in said county or of the militia district in which the county site is situated may perform any of the duties of the local registrar for said district required under the terms of this Act; and each registrar shall in such cases note on certificate, over his signature, the date of filing, and shall forward all certificates to the local registrar of the district within ten days, and in all cases before the third day of the following month, and if there be no local registrar for said district such certificates shall be forwarded to the local registrar of the militia district in which the county site is situated, who shall make all reports for said district to the State registrar and shall perform other like duties of the local registrar for such districts under the terms of this Act. Any local registrar, who in the judgment of the State Board of Health, fails or neglects to discharge efficiently the duties of his office as set forth in this Act, or to make prompt or complete returns of births or deaths as required thereby, shall be forthwith removed by the State Board of Health and such other penalties may be imposed as are provided under Section 21 of this Act."

I do not think the present arbitrary division of the State would work out to the best interests of all concerned. Neither do I think it wise to limit the appointment of the local registrars to a certain class of men. My objections to the present arrangement of registration districts is based on the following facts: Georgia has 152 counties divided into over 1,700 militia districts, inhabited by more than two and a half million people. Some of the counties are large, some small. The large ones have to a certain extent proportionately large militia districts, but such large divisions do not have any more justices of the peace, or ex-officio justices of the peace and notaries public than do the smaller ones. In some of our districts people would have to make round trips of about thirty miles over terrible roads, maybe, in order to

get permission to bury their dead; this is an unfair imposition on them and would result in making the law very unpopular, and in a large number of violations of it with consequent incomplete statistics; and by the law designating a certain class of men as the local registrars it has the effect of attempting to force men to do work for which many of them are not fitted, and many of whom not feeling any interest in it and not appreciating its importance would totally neglect it, or else handle it in a half-hearted way. The above facts being incontrovertible, I feel that it would far better be left to the State Board of Health or to the State Registrar to divide the State into such districts as they or he may think best after having made thorough studies of the variations in the density of population and other local conditions. I also think it would be best to allow the State Registrar to appoint the men who are to be his representatives and assistants in the various registration districts. I further believe that each local registrar should be required to appoint as many sub-registrars as local conditions should demand for the convenience of the public and for the good of the Vital Statistics Department. The registrars and sub-registrars should receive a commission from the State Board of Health and should be allowed to hold office as long as they give mutual satisfaction to the State Department and to their respective communities.

I wish in this connection further to call attention to the fact that while the present law seeks to provide a substitute to act at times for the justices of the peace and notaries public, there is absolutely no provision made for a substitute for the city clerks. The last few lines in Section 4 state that "any local registrar, who, in the judgment of the State Board of Health, fails or neglects to discharge efficiently the duties of his office as set forth in this Act shall be forthwith removed by the State Board of Health," etc. Since the body of men comprising the State Board of Health is scattered in widely separated parts of the State and only come together in executive session semi-annually or quarterly at most, and since it would inevitably cripple the work and cause great inaccuracies in the figures to have an incompetent man as local registrar, and especially so if he were in a large community, I think it would be better to allow the secretary of the State Board of Health or the State Regis-

trar, or both in consultation, to remove an unsatisfactory officer as promptly as he may be discovered to be such. Furthermore, under our law there is no provision made for replacing the city clerks in case they refuse to act, or do the work in an unsatisfactory manner.

Section 7 sets forth the items which the death certificate shall contain. They are twenty in number and to them I think it would be well to add two more, to wit: Was a post-mortem examination held? If so, give summary of findings.

A clause in Section 9 provides that in case a body is to be shipped the undertaker shall attach the removal permit to the outside of the box containing the coffin. I would point out here that the standard transit permit is about the size of one of these sheets of paper and sets forth certain facts about the deceased which should, out of consideration for the memory of the dead and out of consideration for his or her family or friends, be kept from the station loafer and the village gossip. I suggest, therefore, that the law require the undertaker to put the transit permit in an envelope before tacking or pasting it to the box.

Section 16 reads in part as follows: "Every physician, midwife, and undertaker shall, without delay, register his or her name, address and occupation with the local registrar of the district in which he or she resides, or may hereafter establish a residence, and shall thereupon be supplied by the local registrar with a copy of this Act, together with such rules and regulations as may be prepared by the State Registrar relative to its enforcement." In other words, it is made obligatory on the State Registrar to guess how many people are going to register in more than 4,000 registration districts, and to have enough literature at each place to supply all who may record their names. This would result in enormous waste or else if the said officer attempted to make 4,000 individual estimates some places would get too much material and others not enough. To avoid these undesirable contingencies I would think it proper to require all directly concerned to register their names and occupation by a certain date, and that the State Registrar be furnished immediately thereafter with duplicate copies of the lists in each of the various districts. In this way the Vital Statistics Bureau would have definite data upon which to

base its shipments of supplies. Under the present arrangement \$2,000 worth of paper is required, and \$5,000 worth of printing will have to be done as the initial order—these are the estimates arrived at by the State printers and myself after carefully studying the situation.

I can not say that "excepting these things the law is all right"; there are other undesirable provisions which could be pointed out, but they are of minor importance and I will not detail them here. I wish to repeat, in conclusion, however, that I consider it of the utmost importance to the treasury of the State and to the welfare of the Vital Statistics undertaking that the above correction be made before any attempt is made to collect the data contemplated by the law.

PUBLIC HEALTH WORK IN THE FIRST SANITARY DISTRICT AND SOME PATHOLOGIC CONDITIONS AMONG CHILDREN.*

**C. C. Whittle, M.D., District Commissioner
of Health, Tifton, Ga.**

The primary aim in public health work is to make the work popular with the people. The second is to do the greatest good possible, and this should always be kept in mind. However, it requires considerable time to make a showing in this line of work, as it depends on the education of the public. It is certainly the first duty of the District Commissioner of Health when beginning in a new district, to make himself and the work popular, so the people will not discontinue it before he has time to get results. This, in many instances, is not easy to accomplish, and it depends upon the personality of the District Commissioner of Health, and many other things, not necessary to mention.

Dr. Fort commenced work in Irwin and Tift Counties, which form the First Sanitary District of Georgia, March, 1915,

First, the Board of Health in each county was considered. The work was explained, and the co-operation of every member secured. Second, all the physicians in the district were visited. Special notice taken of those not in favor of, or opposed to, the

*Read at Meeting Association of State and Municipal Health Officers, Augusta, April, 1917.

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work, and these cultivated until their attitude was changed. This was very easy to do in the First District, as the physicians are all splendid men and most of them rank well professionally.

Third, the acquaintance was made of all county officers, and representative citizens in different sections of the district. These sections were always kept in mind. If unfavorable criticism came from any one, or the work was thought to be not very solid, something was done at once to inspire enthusiasm. When I succeeded Dr. Fort, he had examined schools in every section of the district, as I thought, in a very unsystematic way. It did not take me very long to decide why he had done this. In each instance, there would be found living near a member of the board, or some person whose co-operation was essential to the work.

Fourth, it was necessary to do some one thing that would meet the approval of the entire population. Typhoid fever had been constantly occurring for a number of years. Each physician in the district reported an annual average of from eight to sixteen cases. So it was advertised that the people would be vaccinated against typhoid, a number of places selected and visited on definite dates, at which the people gathered for this purpose. A large number took the vaccine; since then not a doctor has reported more than two cases of typhoid. Very few have had one case. There has not been an instance where a vaccinated person suffered.

Fifth, all of the schools were visited and lectures made on malaria, and a prize offered to the boy or girl from each county, who prepared the best composition on malaria, its cause and prevention. The successful pupils are Mae Chandler, of Tift County, and L. D. Joyner, of Irwin County. I wish to thank Dr. White for passing on the papers.

As far as possible the infectious diseases have been kept up with. Whenever they were reported in a section, the patients were visited, also the school, literature on the disease distributed, and a talk made at the school.

The time not needed for the work already mentioned was employed in the examination of school children.

Since succeeding Dr. Fort in March, 1917, all my time has been devoted to looking after epidemics and examinations of schools.

In the near future, a typhoid vaccination campaign will be put on. After that, soil pollution and hookworm disease will be taken up. The plan used by the International Health Commission and carried out in Georgia by our State Board of Health, will be followed. There has been nothing decided on further than this. However, the needs will be carefully taken up with our board, and I am confident the most practical and beneficial things will be done as their importance demands.

Pathologic Conditions Among School Children.

Since March, I have examined about 1,000 school children. I am sorry that my report is incomplete, as it might interest you. However, the conditions met with, and the treatment of them, are of the most important.

The teeth are probably most frequently found decayed. Nothing is said about it, where the second set have not appeared, unless the teeth are very bad. Riggs' disease and unhealthy gums should be reported. We must not forget decayed teeth may cause acute or chronic trouble outside of the mouth.

In my opinion diseases of the eye rank first in importance. Good vision is very essential to the child who is in school.

Very few cases of acute conjunctivitis are seen in schools. When this is found it is obvious the child should be excluded from school and have proper treatment.

For convenience the chronic conditions will be referred to as inflamed lids, granular lids and trachoma.

Under inflamed lids, all conditions, from injection of the conjunctiva to engorgement and inflammation are included.

Granular lids takes in all conditions where they are slight to considerable granulation, but could hardly be called trachoma. The conditions that might be trachoma, and the undoubted cases of trachoma, are reported as such.

(This is the classification used to report to the parents, sample will be shown shortly.) The first two conditions are very common, but trachoma is seldom found.

I am aware that some authors consider granular lids and trachoma the same disease, but I agree with those who claim the opposite as true. Granular lids occur very often, especially among young, badly kept children. From two to four cases are often seen in one family. These children nearly always show

some abnormality, as to size or nutrition, and often both.

The granulation are most always on the lower lids, and may be just a few and of small size, or large, and very numerous. In most instances dry yellow secretion is seen on the eyelids. Cases not showing this, probably, had recently washed their faces.

The most striking thing to me is the slight or no inconvenience caused by this condition in many instances. In all cases where these granulations are found, I ask, "Do your eyes ever trouble you?" and invariably the answer is, "No, sir." Recently a prominent citizen of Tifton came to me with his brother and nephew, who showed a report having this condition checked on it. He told me the boy never complained of his eyes, and neither of them could see anything wrong. I carefully pulled down the lower lid of the boy's eye, and they were astonished at the rows of large granulations.

Another man whose boy I had reported, defective vision and granular lids, after taking his boy to an eye specialist, brought the report back to me, and the eye specialist's report read: "I found defective vision caused by granulated lids." I believe defective vision can and does cause granulations. I had chronic conjunctivitis which refused to respond to lotions, etc., but has never troubled me since I commenced wearing glasses.

However, it seems doubtful to me that moderate granulated eyelids could cause defective vision.

How much importance should be attached to inflamed and granular eyelids among these children? How dangerous are they, and what are the results of those not treated?

(In discussing this paper, kindly give your idea.) I think these conditions should all be treated. But as the District Commissioners of Health are not allowed to treat cases, and the specialist is not of the same opinion, or does not co-operate with us, should we endeavor to send them to the eye man, or recommend the proper and frequent application of soap and water. These conditions are not very common among clean and well-kept children.

A few words about tonsils. We seldom see acute tonsillitis in the schools. The conditions often found are designated on my reports, as enlarged and diseased tonsils. Under the first, I include marked hypertrophic

tonsils. There is some chance of the specialist not sharing our opinion when there is moderate enlargement, but by using conservatism that will not often happen.

Under diseased tonsils, I include all other tonsils that seem sufficiently pathologic. In many instances the presence of enlarged lymphatic glands in the neck decide this, as I report every suspicious tonsil "diseased" when the lymph glands are enlarged. In many instances these children are taken to a specialist, who simply looks at the tonsil, never gets a history or examines the lymphatics and sends the child away either taking out the tonsils, or advising their removal.

Let us consider that more than 150,000 people die in the United States every year of tuberculosis. The post-mortem statistics show that many adults who die of causes other than tuberculosis, have the characteristic tubercle in the lungs either calcified or walled in, which indicates they had the disease some time in life. Tuberculosis is prone to attack the bones, joints and lymph glands of young children. The opportunity of young children who play in, and grow up in dust, dirt and poorly ventilated houses to contract tuberculosis is great.

Certainly most people who suffer from tuberculosis get the bacillus in early life. The germ remaining in the lungs, lymphatics, bones and joints, often setting up inflammation during puberty, or when the individual's resistance is lowered by some disease or condition.

The tonsils and adenoids surely play a very important part in early life, in the way of infectious diseases, and development both mentally and physically. Which is best to sacrifice, a hundred innocent tonsils or leave one pair that proves a handicap, physically and mentally?

Gentlemen, we need the co-operation of every class of people; it will require considerable education before the best results can be obtained in this work. The general practitioners should inform themselves of the significance of these conditions so they can be of greater aid to us. We need well-trained eye and throat men; they are absolutely necessary.

It is the duty of every person who does a specific thing to do it the best it can be done; especially should this apply to the medical man. For that purpose we have met here, read papers and discussed them. Each one

knows what is of most interest to him. I hope my remarks will be freely discussed by all, as I will be sure to get new and better ideas that will be of great benefit in my work.

EDUCATION THE CORNERSTONE OF SANITATION.*

By Dr. M. M. McCord, County Health Commissioner, Rome, Ga.

Last year marked our beginning in sanitation for Floyd County. It was new to our people just in the same manner that it is new everywhere until the people have an opportunity to learn something about it.

Many people thought that as soon as the work began every man that had an offensive pig pen would be hauled to jail without bail. They seemed to think that it was a "knock-down-and-drag-out" to every person that in any manner violated the principles of sanitation.

We soon changed their ideas about the plan of procedure. Usually the fellow that wants so much done to make his neighbor respect the principles of sanitation is a greater violator himself.

Our first efforts in furthering sanitation were in various kinds of publicity work. We have carried a public health column in one of our daily papers every Sunday for over 15 months. In this column we have discussed sanitation from every angle. We told the people what sanitation is, and also the part each person should take in helping to carry the work to success. We have received many assurances that the weekly articles were being read, and that many of the principles outlined were being put into practice.

The eighty-five schools of Floyd County have been visited twice, a lecture delivered on sanitation and inspections for defects. During 1916 3,310 pupils in the county's public schools were inspected. Of this number examined, I found 1,444 with either a physical or dental defect. The parents of all the children having defects were notified by card from my office, with requests that they consult a physician or dentist as the case might be. Up to January 1st there had been 140 of the children to get defects corrected. I

am not prepared to report as yet on the present year's work, as the inspections have not yet all been compiled in my office, but I am expecting a much larger list of corrections this year, inasmuch as last year was an educational year to many. Wonderful results have been observed in some children that had defects corrected, and, therefore, many are now willing to accept it as a wise step.

A health league has been organized in every rural school. On every Friday afternoon the teachers lecture to the schools for thirty minutes on some phase of sanitation. Once each month a public meeting is held on Friday afternoon, several of the boys and girls read essays on different subjects assigned by the teacher, and the parents are invited; consequently, we are teaching many skeptical parents about sanitation through their own children. I have literature to cover the entire field of sanitation, furnished me by the United States Public Health Service and the Metropolitan Life Insurance Company. I supply each teacher with an assortment of this printed matter on sanitation from which he gets food for disseminating knowledge to the children. My purpose is to make each school a nucleus for sanitary activities. After a while we expect these nuclei to coalesce and then have a county-wide activity in the direction of health and sanitation.

The educational work accomplished during 1916, through the help of the United States Public Health Service, is already showing the best of results. There are approximately 8,000 homes in Floyd County. Every home was visited by one or more of the health doctors; a personal interview was held with the head of each family on home sanitation, and literature left to explain in detail the simplicity of sanitation, and what it would eventually mean to the home from an economic as well as from a humanitarian standpoint. This personal interview, in practically all the cases, convinced the people that sanitation was worth while. All of the homes have not yet made their premises sanitary; in fact, some never will, but nevertheless many homes have already dropped into line for sanitary improvements, and others are gradually seeing the wisdom of it, and are planning for better health conditions where they have to live. The work has been presented to every home in such a very reasonable manner that practically every man,

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woman, boy and girl in the county are enthusiastic for improved sanitation, and are friendly to the movement.

Lectures, illustrated with lantern and slides, have been delivered in every section of the county. These lectures have been well attended and much interest manifested. The people, especially in rural sections, are becoming educated on correct sanitation.

During the North Georgia Fair in Rome last October we put on a health exhibit. At this exhibit we had material to demonstrate every different phase of sanitation. This exhibit was visited by thousands of people, not only residents of Floyd, but from a number of other North Georgia counties, and they had an opportunity to see the numerous sanitary devices they had been told so much about. We gave them an object lesson on sanitation, and as a result, they got a much better understanding of what we wanted. It is our purpose to put on this special feature again at our fair next October.

We have mothers' clubs all over the county. In their clubs we endeavor to teach the mothers the importance of complete isolation in case of communicable diseases. We explain to the mothers that it is not necessary for children to have any contagious disease, and furthermore that every such disease is dangerous, either directly or from complications that often result.

Typhoid fever, while a rather common and often fatal disease, yet, one that few people know anything about the cause or prevention. We collect reports on typhoid fever, along with reports on all other communicable diseases. When a report is received, a trip is made at once by the health commissioner to the home of the sick. A rigid investigation and inspection are made in the presence of the family in an effort to locate the cause. Opportunity is taken at this time to explain where and how people get typhoid fever. A few warnings how to prevent the spread are thrown out. The object lesson gets good results. I invariably urge anti-typhoid inoculations in every community where there is typhoid fever. Last year we gave 8,000 inoculations through the office of County Board of Health.

In reference to the educational work connected with typhoid fever, I desire to report a little experience: A few weeks ago a kind lady phoned me that at the foot of a certain mountain was a family of father, mother and

fourteen children, all living in two rooms, and that two of the children had typhoid fever. The good lady told me that she did not think the family was observing the sanitary regulations, and requested me to go out and see them, which I did. I found everything to be just as reported. The home was on a steep slope of the mountain. The slope was to the front. I asked the mother what she was doing with the stools. "I am emptying on side of hill," said the mother. What did your physician tell you to do with it? "Nothing at all," she said. "Well, what did he tell you to do to prevent the spread to the balance of family?" "Why, Doc, he said just set a bottle of carbolic acid in corner of room with the stopper out, but I did more than that; I wet a rag in turpentine and hung it on a nail over the bed." I said, "Well, let's see your well." The old man took me to the well, which was further down the slope in front of the house. The well was his fighting piece of property. As we were going to the well the old man told me about running two of the government doctors off his place last year because they said the water in his well was contaminated. The old man drew up a bucket of water, put it to his nose, and then wanted me to smell it; also wanted me to taste it. The water was about the color of starch water. Because the water did not taste like dead cats or smell like a compost pen he thought it was all right when, in fact, if he had followed the suggestions of the federal health officers last year he possibly would have saved his children these attacks of fever. Who would dare say that anything would mean more to this family and the community than some sanitary education?

It is my contention that the work of sanitation should be considered a matter of education equally as much so as English, mathematics, chemistry, history, music or any other of the liberal arts or sciences. We can not force people to speak English if they know nothing about the language, neither can we force them to be good sanitarians and practice the principles of sanitation without knowing something about what you mean by sanitation. All publicity work, properly carried on, is furthering the cause of sanitation, but in my judgment we should not work for present results alone. The educational work that is being done today through the public schools of Floyd County, in teaching the boys and girls the vital principles of sanita-

tion, is bound to be a cornerstone that will, in years to come, prove its real worth to the manhood and womanhood of our county in the cause of health and better health conditions.

THE LABORATORY AS AN AID TO PUBLIC HEALTH WORK.*

L. T. Patillo, M.D., Bacteriologist Georgia State Board of Health, Atlanta, Ga.

The value of clinical laboratory findings as an aid to diagnosis is so well recognized that we may say no record of a case is complete unless the laboratory report is included. But as Public Health work is still in its infancy we have not as yet had time to learn just what part the laboratory is to play. Still it is safe to predict that when used to the best advantage it will be of even greater assistance to the field worker than to the clinician.

Just as we find physicians who will not use the laboratory because its findings have not always tallied with their ideas of a given case, so will we have men in public health work who will not use the laboratory because some examination failed to show what they thought it should. The best laboratory under the best conditions is not infallible, and the wonder is that the results are as good in many cases as they are when we consider the way specimens are taken and handled before reaching the laboratory. Undoubtedly the laboratory often fails to confirm a correct diagnosis because of the fact that the specimens for examination have not been properly taken or have become contaminated from careless handling.

Some of the things that the laboratory worker has to contend with almost daily might be mentioned to advantage. Probably blood specimens for malarial examination and Widal reactions give more trouble than anything else. Very often blood for malarial examination is dropped on a slide and allowed to dry, no attempt being made to spread it at all. Such a specimen can not be fixed to the slide by any known method so that it can be properly stained and even if it could it would be so thick that an examination would not be satisfactory. Other speci-

mens of blood are pressed out between two slides or cover glasses. These dry out around the edges sufficiently to seal the slides firmly together while the center remains moist and the blood cells become distorted or even disintegrated so that the examination is of little or no value. Very often there are bacteria in these which multiply and further interfere with the examination. Often the little ring of blood around the edge is the only part of the specimen that can be examined at all and this gives but a poor idea of what might be in the blood, for unless the parasites are abundant, the probability of finding them is small. Rarely we receive blood dried on a slip of paper and less frequently in a homoeopathic vial for malarial examination. These are, of course, impossible. Where attempts are made to make proper smears they are of all grades of goodness or badness, as the case may be. Some have only the tiniest little smear, while in others the entire slide is covered with a very thick film.

A little practice will enable any one to learn to make good blood smears if only clean slides are used and it is easy enough to clean the slides properly, as this is best done with soap and water—all the soap should be rinsed off and the slides thoroughly dried, care being taken not to touch the surface with the fingers, as finger marks prevent the blood from adhering to the slide. When the smears are made the blood should be dried as quickly as possible, as the red cells become erinated if the drying is slow and the examination is then not so satisfactory. At least two slides should be sent from each suspected case, and these should be wrapped separately, then packed in a box or mailing case and not in an envelope for mailing, as they are nearly always broken—sometimes almost pulverized—when not properly packed.

If the patient has had any considerable quantity of quinine during the past twenty-four hours, parasites will usually not be found in the peripheral circulation, and very often, in aestivo-autumnal infections, it is necessary to take the blood very soon after a paroxysm or no parasites will be found.

As for blood for the Widal test, it should be collected in a very small sterile tube, or on a piece of paper and not in a vial, as is so often done. If the tube is used, it should be sealed as soon as possible to prevent loss of the serum or contamination, for if it becomes

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contaminated, the clot is broken up and interferes with the examination. The most convenient method of collecting blood for a Widal is on a prescription blank. The results from using this dried blood for the test are said not to be quite so accurate, but certainly they are better than when haphazard methods are used collecting blood in any sort of unsterile vials that may come to hand, for in these the clot is always broken up and very often the bacteria present have multiplied sufficiently to interfere very materially with reading the test. Often there are as many bacteria in the blood as in the culture used for the test.

Where cerebro-spinal fluid is to be examined for meningococci, it would be well to centrifuge the fluid and make slides from the sediment, as the meningococcus autolyzes very quickly and often can not be found at all by the time the fluid reaches the laboratory. These slides should be fixed either by heat or methyl alcohol or formaldehyde and alcohol. Any contaminating organism that gets into the fluid multiplies rapidly and interferes seriously with the examination.

It would seem that it is unnecessary to mention sputum in this paper, but it is a fact that almost half the specimens received at the laboratory are leaking or otherwise in bad condition. A bottle should be not more than one-fourth full of sputum, and should be stopped with a good well-fitting cork and this should be fastened down with a string or strip of adhesive plaster. Jelly glasses, snuff boxes and ointment cans or jars should not be used for sputum containers, as they all leak, and even though the specimen has not all leaked out, the danger to the laboratory assistant should be considered. There is a popular fallacy that where a patient has a hemorrhage, part of this must be rushed to the laboratory for examination. The best specimen is some of the regular sputum, as this is not diluted with blood and the bacilli are more likely to be found.

In examining for the eggs of intestinal parasites only a small amount of feces is necessary. No matter what sized container is used a mass of feces the size of the end of the finger is the greatest plenty, and this should be from a normal stool, and not following salts or oil, and especially oil, as the oil globules interfere seriously with the examination.

The examination for amoebae should be made while the specimen is still warm, as the amoebae lose their power of motility on becoming cold. If possible, it is better to send the patient to the laboratory for this examination.

Pus to be examined for any bacteria should be smeared on slides and dried at once—not placed between slides and allowed to remain moist. Here, as in other specimens, a contamination may render the examination entirely worthless, as very often only a few bacteria are present in the pus as it comes from a wound, but when placed in a bottle where contaminating organisms are present, it may reach the laboratory teeming with bacteria of a number of different kinds.

The State Board of Health furnishes Loeffler's blood serum mixture culture tubes for sending in cultures for diphtheria bacilli, and these should be used by every one, as better results are obtained in this way than where unsterile swabs are used to take the specimen and these sent to the laboratory in unsterile bottles.

From this you can readily see that a large number of physicians are not getting the best out of the laboratory, and for it to be a real aid in public health work it will be necessary for field workers to use the same care in obtaining and shipping their specimens as the laboratory worker uses in making the examination.

Just how far the health officer and the laboratory are to go in hunting down carriers of disease germs, we have yet to learn. But this much I would impress upon you: If you would have real aid from the laboratory, you must give it a fair chance.

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An advertisement in The Journal of the Medical Association of Georgia will bring results. Rates sent on request.

WHAT THE LOCAL HEALTH OFFICER SHOULD KNOW ABOUT WATER SUPPLY.*

By Ray C. Werner, B.S., Chemist, Georgia
State Board of Health, Atlanta, Ga.

Undoubtedly, one of the important duties of health officers, especially in communities where other health agencies are not represented, is the general supervision of the question of public water supply. The term "general supervision" is used because, unless the health officer is also directly in charge of diagnostic and laboratory work for his community, he will not likely be called upon to make routine examinations of water samples from local sources. It is of the utmost importance, however, that he know the fundamental facts in regard to the important factors affecting the safety of the water supply of his town or district.

In general we may say that the health officer need not be qualified as an expert in the chemical, bacterial and microscopical examination of waters, but he should have a familiarity with the accepted methods of water purification, including both filtration and sterilization; the bacterial standards generally accepted for drinking waters; the proper methods of collecting and shipping water samples; and, of course, what diseases are truly water-borne and, therefore, to be considered as possibly caused by polluted water. Certainly any health officer having sufficient time and inclination to learn the simpler technique of water analysis will be a more efficient officer and will undoubtedly find the knowledge valuable, as problems in regard to water supply are sure to arise sooner or later.

A short discussion of the points mentioned above is here in order:

First: The types of filter plants used in this country are practically limited to three general classes, the slow sand filter, the mechanical filter using alum as a coagulant previous to filtering, and the pressure filter, also generally using coagulation. Slow sand filters are not commonly found at small waterworks and, since the pressure filter is also not frequently met with, we may pass these

by with the comment that the pressure type is not very reliable from a bacteriological standpoint. The mechanical filter, often called also the gravity filter, is now generally used in all except very large works. There are about thirty-five plants of this type in Georgia. Most of the remaining supplies—about one hundred—depend upon deep well sources, which furnish good water requiring no chemical or filtering treatment.

The mechanical filter plant usually consists of three or four separate units or divisions—the impounding reservoir for raw water, the coagulating basin where the water is treated chemically, the filter and the clear water basin for storing the filtered water. The chemical treatment is of the utmost importance in this type of filter and, without such treatment, filtration will never be efficient. The chemical generally used is sulphate of alumina, which is commonly called filter alum, and is manufactured largely for waterworks use. This chemical breaks up when added to the water, giving aluminum hydrate, which is a sticky, flocculent precipitate. The filter is thus coated with material which catches the finest particles of suspended matter and bacteria. Efficient filtration should remove practically all bacteria and all of the suspended material. The chemical also has a decolorizing effect on the water. It should be emphasized that only in the case of gross mismanagement does any of the alum solution pass through, as such, into the filtered water. Even in case this happens, it would be almost impossible to drink enough of the water to get a therapeutic dose of alum. The supposed dangers of alum in filtered water are greatly exaggerated by the public, whereas the real danger, that is, the presence of intestinal bacteria, is frequently overlooked. By inspection and inquiry at the waterworks the health officer can frequently get valuable information as to the quality of water furnished to his community. The State Board of Health stands ready to investigate public supplies and to examine such samples as may be necessary. The waterworks at the cities of Columbus, Atlanta, Milledgeville, LaGrange, Commerce and Jackson are now equipped with small laboratories for making bacterial examinations, and other plants are being encouraged to make these tests, as they give the only accurate and rapid means of control at a filter plant.

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Water sterilization is now largely used as an adjunct to filtration. The agents employed for this purpose are chloride of lime (calcium hypochlorite), also often called bleaching powder. It is efficient as a germicide, but is troublesome to handle on account of its tendency to take up moisture and its corrosive effect and disagreeable odor. Liquid chlorin acts in the same general way, is much more readily and accurately applied to the water and is, in general, an excellent disinfectant. It is supplanting hypochlorite in a large number of works.

The health officer should be familiar with the meaning of the common examinations made in testing water samples and should inform himself as to the proper interpretation of the laboratory results. At the present time, the typhoid germ is practically never sought in the routine examination of water samples. Instead the water is examined for the colon bacillus (*B. coli*), and its distribution in the water is almost universally used as an indication of the degree of purity. Various standards have been set up as regards this organism, but, as a general rule, it should not be found in any considerable numbers in water for drinking purposes. On account of the very wide distribution of intestinal germs, it is misleading to judge the sample too critically as a result of one or two tests for *B. coli*. It may be said that the germ ought not to be found in one cubic centimeter of the water and water which does not contain it in ten cubic centimeters is of excellent quality. The total number of bacteria in water samples is generally determined by growing the organisms on agar, either at blood temperature or at ordinary room temperature (20° C). The standards for the counts at these different temperatures vary somewhat, but, as a rule, an excessive number of bacteria is always to be regarded as suspicious. The health officer should also have a general idea as to the interpretation of the ordinary chemical analysis made in examining water.

One of the most important steps in the testing of water is the collection of a proper sample. The whole of the laboratory results may be useless if the sample is carelessly collected or if it is not shipped under proper conditions. In all instances, complete information as to the source of the sample is absolutely necessary. The proximity of drains or streams receiving sewage pollution should

always be mentioned and a general statement giving the distance to barns, stables and other polluting influences should be sent with the sample.

Bacterial samples must be collected in sterilized bottles and packed in ice for shipment. Unless the sample is kept cool the bacteria increase so rapidly before the examination is made that the results are useless. Sending samples without ice, therefore, generally only serves to consume time and effort. Clean bottles may be sterilized, with their stoppers, by boiling before use for sending samples, but it is generally better to write to the state laboratory for sterile containers and shipping boxes. It is, of course, necessary to handle the bottle carefully in order not to contaminate it by the fingers.

As to the diseases actually conveyed by water, it may be said that generally the only important ones are typhoid fever, diarrhea and dysentery. Cholera is a water-borne disease, but is now hardly ever encountered in this country. The health officer in any community should remember that for an epidemic to be considered as water-borne, its distribution must be general over the part of the community using the public supply. If a very large proportion of the population using the public supply has escaped the disease, this practically proves that the water supply was not responsible. In case of any outbreak of intestinal disease, full information as to the distribution of the cases should be collected and such distribution considered in its relation to the public water supply. It must be borne in mind that in strictly rural communities, where sanitary privies are rarely, if ever, found, flies are largely responsible for transmitting these diseases. This, probably, is a more frequent cause of intestinal disease than is the matter of water supply, excepting in cases where there is evidence of direct pollution of the source of supply. The fly is often responsible for local epidemics of the kind mentioned.

Disagreeable tastes and odors rarely indicate pollution, though commonly associated with it by the public. Odor and taste in water usually arise from its mineral constituents or from the growth of minute plant or animal organisms in open waters exposed to the sun.

The hardness or lime contents of water often causes the public to charge such water with an increase in kidney disease, urinary

calculi frequently being mentioned. This idea is not founded on fact, as it is well known that communities using hard water have proved, by years of vital statistics, that there is no increase in disease on account of this characteristic of the water supply.

The general facts enumerated above should be kept in mind by the health officer in his work of educating the public to a demand for drinking waters of a good hygienic quality. Wherever he is in doubt as to specific points in reference to water supply or the analysis of samples, the State Board of Health will gladly furnish any additional information or will investigate matters affecting the purity of any public water supply of the state.

DR. HENRY McHATTON.

Dr. Henry McHatton, after an illness of only four days, died at 8:30 a. m., Sunday, April 22, 1917, at the Williams Private Sanatorium in Macon. The immediate cause of his death was myocarditis following a slight influenza.

Dr. McHatton was born February 29, 1856, at Baton Rouge, Louisiana. He was the son of James Alexander McHatton and Eliza Chinn. He is survived by his wife, Mrs. Eliza Hubbard McHatton, whom he married in Norwich, Connecticut, in 1880; and one son, Dr. Thomas Hubbard McHatton, head of the department of agriculture of the University of Georgia, Athens, Georgia. He is also survived by two sisters, Mrs. Anella McHatton Hedges, of New York City, and Mrs. James Noyes, of Stanford, Connecticut.

His family was one of the best-known families in the South. His father was the delegate to the Charleston Secession Convention representing Louisiana, a man of unusual mental capacity and a leader in the political interests of the South. He was a large planter of cotton, and at one time owned the largest cotton mills in the South. Immediately after the War Between the States he moved to Cuba and became an extensive sugar planter. His mother was of a family of equal prominence, her father being the distinguished Judge Chinn, of Kentucky. She was the authoress of several popular historical works dealing with the times of the Southern Confederacy.

Dr. McHatton received his academic education at General Russell's Military School, New Haven, Connecticut. He received his medical education at Bellevue Medical College, New York, graduating in 1881. For two years he was connected with the outdoor department of Bellevue Hospital, New York. He came to Macon and entered the practice of medicine in the fall of 1882. At the time of his death he was surgeon for the Southern Railway at Macon, and was the oldest employe of that corporation in point of service, having been the local surgeon for the East Tennessee, Virginia and Georgia Railway before it was merged into the Southern system. For a period of ten years he was the senior member of the medical firm of McHatton & Williams, which was dissolved in 1900, when the latter retired from general practice to devote his entire time to surgery.

Dr. McHatton was an active member of various medical and scientific organizations. He was the president of the Medical Association of Georgia in 1904, president of the Macon Medical Society in 1890; a member of the American Medical Association, the Pan-American Medical Congress, the King's County Medical Society of Brooklyn, Southern Railway Surgeons' Association, the National Geographical Society, the Audubon Society of America, and a Fellow of the American Association for the Advancement of Science.

Dr. McHatton was largely instrumental in founding the Macon Hospital. Through the combined influence of the late Dr. Wm. F. Holt and Dr. McHatton, the interest of the people of Macon was aroused to the need of such an institution. Dr. Wm. F. Holt was the first medical director of the hospital and was succeeded at his untimely death by Dr. McHatton. His wise foresight, his justice to every one and his faith in the good that could be accomplished, made him an invaluable friend to that institution. In appreciation of the devoted services of Dr. Holt and Dr. McHatton, the city council at a recent meeting directed that a memorial tablet, dedicated to the memory of these two great and good men, should be placed in the new Macon Hospital building.

Dr. McHatton enjoyed the reputation of being one of the leading diagnosticians in the state of Georgia and a practitioner of unusual ability. He had a large clientele and was universally beloved by those with whom he came in contact. His gentleness

endeared him to all of his patients and many homes now feel his loss. About four years ago, on account of declining health, he was forced to retire from work, but his love for the work, his devotion to his friends and his interest in the profession made these years of enforced rest a source of disappointment and grief.

Dr. McHatton was not only prominent in Macon; his reputation as a consultant extended through the entire state of Georgia, and his value as a medical practitioner was recognized throughout the United States. He was a devoted member of the Medical Association of Georgia, and rarely ever missed the opportunity of attending its meetings. He was frequently on the floor in the discussion of prominent papers, and was himself a generous contributor to the literature of the Association. Perhaps there was no man in the Association who was more beloved than Dr. McHatton. His genial manner, his hearty recognition of friends and his ready ability to draw to him new friends, made him exceedingly popular. His fund of wit and anecdote always drew around him a crowd of admirers, each one feeling when leaving his presence that in Henry McHatton he had a warm and lasting friend.

HOUSE OF DELEGATES.

Minutes of Meeting of April 18, 1917.

Meeting called to order by President Dean. Delegates were enrolled.

The Secretary-Treasurer read his annual report, properly audited by the Council, which report was adopted.

Moved by Dr. W. W. Pilcher that after the Annual Meeting of 1917, the By-Laws shall be strictly enforced as regards membership and that no one may become a member of this Association unless he is a member of a component society. Carried.

Moved by Dr. M. A. Clark that all matters pertaining to the Journal be brought before the Council instead of the House of Delegates, as the Journal is published under the direction of the Council. Carried.

The report of the Committee on Scientific Work was received.

Moved by Dr. W. W. Pilcher that a telegram be sent to the President of the United States advising him of the appreciation of

this body relative to his action concerning Medical Preparedness. Carried.

Moved by Dr. O. H. Weaver that the Committee on Public Policy and Legislation be instructed to make all possible efforts to secure the enactment of a law for the prevention of Ophthalmia Neonatorum.

Upon motion the meeting adjourned.

W. C. LYLE,

Secretary.

HOUSE OF DELEGATES.

Minutes of Meeting of April 20, 1917.

Meeting called to order by President Dean. Report of Committee on Medical Defense.

Gentlemen:—The Committee on Medical Defense has by its efforts prevented a number of suits that had been threatened and in some instances have caused suits already brought to be dropped. Several suits have not been defended owing to the fact that the cause of action arose prior to the adoption of the By-Law providing for Medical Defense. Our investigations have shown that in almost every instance such suits have been threatened or brought as a result of careless remarks made by physicians concerning the treatment rendered patients by other physicians, and upon looking into the matter by the Committee, it has been found that in no case was the member culpable, and such assurance made to the complaining party or to his counsel has resulted in the case being dropped.

We, your Committee, therefore, urge upon members of this Association the necessity for extreme carefulness regarding comments made to patients relative to treatment rendered them by other physicians, and would warn all physicians that such remarks reflecting upon the character of treatment given patients is in almost all cases unethical and subjects the maker thereof to investigation by his local Board of Censors.

All work done by this Committee, as well as that performed by investigating committees throughout the state, has been voluntary and entailed no expense upon the Association. Respectfully submitted,

W. C. LYLE,

Secretary.

Report received and adopted.

Report of Delegates to the American Medical Association.

Mr. President and Gentlemen of the Medical Association of Georgia:

The delegates of this Association, Dr. M. A. Clark, Dr. F. W. McRae, and the writer were in their seats promptly on the morning of June 12, 1916, in the House of Delegates, and were present at all the sessions.

The action of the House of Delegates, summarized, is as follows:

1. During the year ending in June, 1916, the fellows of the A. M. A. numbered 43,181, a net gain for the year of 815. Of these 3,369 were deducted during the year, and 4,184 were added. Georgia has 3,425 physicians, 1,415 of whom are members of the State Association, 573 are fellows in the A. M. A., and 437 are subscribers to the A. M. A. Journal, but are not fellows. By a mere matter of form these last may become fellows in the Association by signing the fellowship blank.

2. The report of the Board of Trustees shows that the Association publishes three regular journals: The Journal of the A. M. A., which is probably the best medical journal in the world; The Archives of Internal Medicine, published monthly, to which there are 2,053 subscribers, and The American Journal of Diseases of Children, to which there are 2,198 subscribers. The American Medical Directory is being published by the Association, and each issue shows an improvement. In addition the Association carries on the Council of Drugs and Chemistry, analyzes and reports on each new remedy that is offered to the profession, whether proprietary or otherwise, and answers many inquiries from physicians not published in the Journal. It is interesting to know that the weekly average of the Journal for 1916 was 67,390 numbers.

3. The report of the Judicial Council suggested that the House of Delegates meet two days before the regular session of the Association, and that the House of Delegates elect annually a Chairman and a Vice-Chairman who are to serve for one year. This relieves the President of the Association from acting as the President of the House of Delegates.

4. The Council on Health and Public Instruction made a report during which it showed that it had 250 speakers speaking on public health questions under the auspices of the Association. During 1916 it issued 1-188,500 circulars and pamphlets, which were

distributed throughout the country. The titles of some of these were "Minimum Health Requirements for Rural Schools," "Facts for the Tuberculous," "Save the Babies," and so forth. Any of these may be gotten from the Association by letter.

5. The Committee on Social Insurance made a very full report in which it discussed the social insurance laws in all the countries of Europe. The general feeling on the part of this Committee was that certainly in the more concentrated populations of the East social insurance was on the way, and that we would have in some of the Eastern states some social insurance laws after the manner of England and Germany.

6. The Committee on Medical Education summarized its work as follows: (1) There was kept in Chicago at the Association headquarters a register of all the medical students in the United States, their standing year by year, and so forth. (2) The Medical Examination Board was established and is making an effort to co-ordinate all the different medical examination boards in this country. (3) The suggestion that each student on graduation serve a year in a hospital, and that this be known as the "Intern Year." (4) 55 of the 95 schools in America require two years of college work. Of the remaining 40 only 20 will survive. 15 states require two years of college work for entrance in addition to the four years' high school work. In the end there will be left only 70 or 75 medical schools in this country. There are enough hospitals to furnish an intern year for each graduate, and it is probable by 1920 that most of the schools will require a fifth year for practice known as the hospital year.

In the report of Dr. Bevan both of the medical colleges in Georgia, the University in Augusta and Emory in Atlanta, were publicly mentioned for their improvement in equipment and teaching personnel.

7. A very important matter was discussed by the House of Delegates under the title of "Discipline of Fellows." This matter was brought to the attention of the Association by reason of charges preferred against Dr. George Ben Johnston, of Richmond, Va. Dr. Johnston, it appears, was convicted by the Richmond Academy of Medicine, and he appealed the verdict to the A. M. A. The findings of the Richmond Academy of Medicine were reversed and Dr. Johnston was exonerated. In addition the House of Delegates

passed a law that a member of any county medical society or state medical society tried and convicted before this society would have the right of appeal to the A. M. A., which would have the right to act as a supreme court in such matters, and affirm or reverse the findings and convictions of the lower society. This insures fellow members of the A. M. A. and other members of every county and state association a right of review of his case by an impartial jury of medical men.

Respectfully submitted,

STEWART R. ROBERTS,
FLOYD W. McRAE,
M. A. CLARK.

Report received and adopted.

The Committee on Public Policy and Legislation reported that no Health Legislation had been enacted during the year, but that efforts had been made to have enacted an amendment to the Medical Practice Act, empowering the State Board of Medical Examiners to force the attendance of witnesses when necessary.

Notice having been given at previous meeting, the following amendment to the By-Laws was adopted:

Amend By-Laws, Sec. 3, Chapter 1, by adding the following: "This By-Law shall not prohibit the Committee on Scientific Work from inviting not more than two distinguished members of national organization to deliver addresses or read papers at the annual meetings of the Association and no address or paper shall exceed the time limit fixed by the Committee on Scientific Work."

The following Amendment to the Constitution was proposed and, according to the laws of the Association, must lie over for at least one year:

"There shall be a sergeant-at-arms, to be elected at the time the other regular officers are elected, and to hold office for one year. The duties of the said officer shall be to preserve order in the meetings, and to perform such other duties as the presiding officer shall direct. The sergeant-at-arms is authorized to appoint such deputies as he may need to assist him in the performance of his duties. The sergeant-at-arms and his deputies shall wear badges to indicate their office."

The request of the DeKalb County Society that they be allowed to surrender their charter and become a part of the Fulton County Society was granted.

Moved by Dr. M. A. Clark that a Committee on Social Insurance be appointed. Motion carried, and the President appointed on this special committee Drs. M. A. Clark, Macon; A. J. Mooney, Statesboro, and E. T. Coleman, Graymont.

A resolution relating to the nature of the examinations given by the State Board of Examiners for Nurses was, upon motion, tabled indefinitely.

The following resolution was unanimously adopted:

Realizing, as we do, that quack doctors and fraudulent advertisers are probably the greatest menaces with which every community has to contend and, whereas, the Augusta Rotary Club has rendered such valuable services to the city of Augusta and the state of Georgia by its efforts to rid the state of these unscrupulous advertisers and medical parasites.

BE IT RESOLVED, first, That the Medical Association of Georgia extend to the Rotary Club of Augusta its appreciation of the great work they are doing not only for their community, but for the country at large, we feel that their efforts along this line will result in greater good for a greater number of people than anything they could possibly undertake.

Second. That we also extend to The Augusta Chronicle our thanks and appreciation for its hearty co-operation in this work.

Third. That while it was the intention of this Association to take the matter up with our state legislature at its next session and recommend, and urge, the enactment of laws prohibiting the fraudulent practice of medicine in the state of Georgia, we realize that the matter can be handled by a representative body of business men, such as compose the Rotary Clubs of the various cities of the state far more successfully than we, ourselves, can do it. And with the co-operation of a great daily paper, such as The Augusta Chronicle, we feel that its success is already assured.

We, therefore, hope that the Rotary Club of Augusta will not be content to rid Augusta of these charlatans, but will extend their efforts through all the clubs in the state, and through them to the state legislature, and secure the passage of laws which will forever rid our state of these fraudulent practitioners who reap such a rich harvest

every year from the poor, the ignorant, and the unfortunate of every community.

Be it further resolved, That the Medical Association of Georgia offers to the Rotary Club of Augusta its most hearty co-operation and financial assistance in whatever efforts the club may put forth along this line.

Moved that the matter of a Public Health Section of the Association be referred to the Council with power to act.

The report of the Committee on Necrology was received.

Report of Committee on Necrology of Medical Association of Georgia.

It is the sad duty of your Committee to report that the grim reaper, who is "no respecter of persons," has wielded his gory sickle most vigorously since we last met.

Many of our valued members, their labors ended, have been called to "cross over the river and rest under the shade of the trees." Not only those amongst whom they labored for the amelioration and cure of human ills will miss and mourn them, but it is a source of grief and loss to us that they will no more deliberate with us in these meetings and that we will miss their genial faces and hearty handshakes.

Your Committee has been unable to secure sufficient data to make an extended "In Memoriam" in each case, but craves your permission to furnish such to the Secretary before the transactions of this meeting are published.

We append the names of those deceased:

T. W. Dorsett, Willacoochee.
T. J. Jones, Newnan.
E. J. Spratling, Atlanta.
J. H. Gheesling, Greensboro.
T. S. Hollyman, Covington.
E. W. Dean, Hiram.
J. D. Weaver, Eatonton.
T. J. Nunnally, Griffin.
J. H. Horsley, Sr., West Point.
T. P. Reville, Folkston.
R. D. Nash, Norwood.
E. M. Walker, Sylvester.
C. C. Frederick, Lizella.
Leon L. Moye, Vidalia.
George K. Varden, Atlanta.
David Marion Russell, Cedartown.

J. H. McDUFFIE, Chairman.

The report of the Council was received and adopted.

It was recommended that amendments to the By-Laws be published for the information of the Association.

Upon motion the meeting adjourned.

W. C. LYLE,
Secretary.

Meeting of Council, April 17, 1917.

Meeting called to order by Chairman Dr. E. T. Coleman.

Minutes of previous meeting read and confirmed.

The Secretary reported that there was objection to the appearance of certain papers on the official program.

Moved by Dr. Elrod that the privileges of the floor be accorded to Dr. M. A. Clark. Carried.

Moved by Dr. Elrod that a statement be made to the House of Delegates, concerning these papers, when the report of Council is made. Carried.

The report of the Secretary-Treasurer was made and adopted after being audited for the Council by a committee consisting of Drs. Champion, Harvard and Tuten.

Secretary-Treasurer's Report.

In submitting this, my seventh annual report, I wish to comment on the firm basis of our organization, as well as some features relative to the Association and its work that have been accomplished during the past few years and others that are worthy of your consideration.

In my opinion our present membership practically embraces all the members of the profession in the state who take sufficient interest in the advancement of Medical Science or the welfare of the medical profession, as to make especially desirable members. Not but that there are a few good men outside, but these are the usual exceptions that prove the rule. I say this advisedly, for the reason that the membership while increasing each year, yet, despite every incentive offered to non-members to become members, shows only a healthy growth, largely due to the admission of newly-graduated physicians, who, as a result of superior training in the medical schools, are in better position to understand the advantages of organization than those graduating years ago, and who are, so to speak, "fixed in their ways."

The medical profession of Georgia occupies a peculiar position. The percentage of members of local Societies is among the lowest in the Union. In my opinion this is due to three conditions: First. For a number of years this state had Medical Schools of such inferior grade that their graduates, as a rule, were ashamed to attend meetings of Societies

where they must either sit quietly in their places or else show their ignorance by attempting to discuss papers and often making themselves ridiculous in the opinions of their hearers. In order to maintain the respect of their patients, if not that of their associates, they have usually taken a "wiser than thou" attitude of aloofness toward other members of the profession, and in my opinion this condition will not, and can not, be remedied, until better qualified men take their places. I still adhere to my oft-repeated statement that it will take fifteen years to educate the profession in Georgia to appreciate proper organization.

Second. The practical isolation of a great number of the profession in small villages tends to narrow a man in his views toward other members of his profession, and he either feels that membership will be of no value to him, or else if he can become a member, it will be of value to him only if he can keep his brother physician out. Thus appearing to the public as being better qualified than the other.

Third. The innate, hereditary objection to any form of government or discipline. We of this state are naturally an independent, I might almost say, an obstinate people, and many of us dislike the appearance of any interference with our ideas of personal liberty, even though those ideas may not be in accord with the principles of ethics.

This Association has these conditions to contend with, and we may as well make up our minds that they will exist for sometime to come. Realizing this, it has been my effort, and these efforts have always been supported ably by the executive officers of the Association, to lay a broad foundation, not for immediate and temporary success, but for a continuous and lasting growth. In other words, we are building for the future. Among the things accomplished so far, in regular sequence, we have established a Journal of the Association, with the object of keeping in touch with our members. Information of importance to our members is published in the succeeding issue, and as nearly as possible they are informed of the working of the Association in all its details, instead of waiting until the Annual Meeting to get the information. In this connection allow me to refer more particularly at this juncture to our Journal. As has been stated in other reports, it is not just the Journal we

would like to have, but in the opinion of the Council, it was not wise at this time to enlarge it, for the following reasons: Roughly speaking, the income of the Association may be divided into three parts, used as follows: One-third for conduct of the Association; one-third for Medical Defense and one-third for the Journal. This division would place one dollar of each member's dues for the upkeep of the Journal, while as a matter of fact it costs more than \$1.50 per year to send him his Journal. The cost of paper for the past year has been well known to every member through his newspapers. Virtually all magazines, journals, etc., were reduced in size in consequence. It was not felt by the Council that it was wise at this time to enlarge the Journal, and pad it out with extraneous matter, when it compared favorably with other state Journals, whose membership was not larger than ours. The actual cost of the last issue of the Journal was \$203.61, as against less than \$125 two years ago.

The Council felt that it was better to put on Medical Defense than to enlarge the Journal, by adding features containing general information that may easily be obtained from the National Journals.

Our second step was to secure the passage of the Medical Practice Act, which has so raised the standard of medicine in Georgia that graduates at this time appreciate the advantages of medical organization, and do not even require solicitation to become members. Next it was decided to send out membership cards, which act as a reminder to the individual member in case his local secretary does not.

This was followed by the Medical Defense feature, with which you are all familiar, and needs no elaboration on my part other than to say that it is recognized by all, indemnity companies and members caring to take indemnity protection in addition, will find that companies will make a reduction in premiums that will make such protection in the Association cost nothing.

Broadly speaking, then, we offer our members all the advantages of membership since the adoption of the Medical Practice Act. A Journal that costs us more than \$1.50 per year for each member, Medical Defense that would cost, with the indemnity feature, \$15 per year, and the entire cost is only \$3.00.

The Association is doing an altruistic work: it is making a financial sacrifice to secure every new member.

There is not an eligible physician in Georgia but that has had this information supplied him. While we want every reputable physician as a member, I do not believe it is our duty to further beg and coddle him.

The Association gives more than value received, and in my opinion the time has come when its dignity demands that it should no longer be a suppliant, but on the contrary, should take the position that it is an honor to be a member, and then, and not until then, will the profession seek to obtain membership, and having secured it, make worthy efforts to retain it.

Our paid up membership at this time is about two hundred more than at any previous Annual Meeting, and we still have fifteen organized county societies to report. Several new counties have been organized, and with all outstanding bills paid, we have more than \$1,000 in the treasury.

Income.

Balance in bank Jan. 1, 1916.....	\$ 50.18
Receipts	4,713.54

Expenditures.

Paid vouchers	\$4,758.86
Balance in bank Jan. 1, 1917.....	4.86

Expenditures as Per Vouchers 1916.

Total	\$4,763.72
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No.	Charge Slip.	Returned check.	\$
			3.00
373	Express on By-Laws.....		1.64
374	W. C. Lyle.....		100.00
375	W. C. Lyle.....		200.00
376	Phoenix Printing Co.....		100.00
377	Phoenix Printing Co.....		51.67
378	W. C. Lyle.....		100.00
379	J. P. Stevens Co.....		18.00
380	W. C. Lyle.....		100.00
381	W. C. Lyle.....		150.00
382	Phoenix Printing Co.....		50.00
383	Phoenix Printing Co.....		151.40
384	Postmaster		21.36
385	Stamps		5.00
386	W. C. Lyle.....		550.00
387	Phoenix Printing Co.....		50.00
388	Phoenix Printing Co.....		100.00
389	Phoenix Printing Co.....		51.00
390	Stamps		3.00
391	Stamps		4.00
392	Phoenix Printing Co.....		200.00
393	W. C. Lyle.....		600.00
394	Phoenix Printing Co.....		100.67
395	Phoenix Printing Co.....		91.20
396	Miss Fannie Pickard.....		25.00

No.

397	H. W. Terrell, Councillor.....	20.00
398	E. T. Coleman, Councillor.....	47.50
399	C. K. Sharp, Councillor.....	7.10
400	E. C. Davis, Delegate.....	100.00
401	A. M. A. By-Laws.....	8.50
402	W. C. Lyle.....	150.00
403	Phoenix Printing Co.....	50.00
404	Postmaster	21.36
405	Phoenix Printing Co.....	100.00
406	Express and Stamps.....	5.62
407	W. C. Lyle.....	150.00
408	St. Louis Button Co.....	17.45
409	Phoenix Printing Co.....	100.00
410	M. A. Clark, Delegate.....	100.00
411	S. R. Roberts, Delegate.....	100.00
412	J. A. Priece, Councillor.....	25.45
413	W. R. Dawson.....	5.00
414	Phoenix Printing Co.....	100.00
415	W. U. Tel.....	1.01
416	Wm. Whitford.....	168.07
417	W. C. Lyle.....	150.00
418	Phoenix Printing Co.....	100.00
419	W. U. Tel.....	2.36
420	W. C. Lyle.....	25.00
421	Phoenix Printing Co.....	50.00
422	Phoenix Printing Co.....	50.00
423	W. U. Tel.....	1.37
424	Phoenix Printing Co.....	101.57
425	Phoenix Printing Co.....	50.00
426	W. C. Lyle (Loan).....	20.00
427	W. C. Lyle.....	25.00
428	Stamps	4.00
429	W. C. Lyle.....	75.00
430	W. U. Tel.....	.56
Total.....		\$4,758.86

Supplementary Report (Jan. 1, 1917, to April 15th.)

Balance in bank.....	\$ 4.86
Receipts	3,614.55
Total.....	\$3,619.41

Expenditures as Per Vouchers.

	Charge Slip.	Returned Check.	\$
			9.00
431	Postmaster		2.72
432	Phoenix Printing Co.....		152.00
433	W. C. Lyle.....		150.00
434	W. C. Lyle.....		150.00
435	Postmaster		40.00
436	W. C. Lyle.....		150.00
437	Phoenix Printing Co.....		200.00
438	W. U. Tel.....		.60
439	W. C. Lyle.....		75.00
440	Phoenix Printing Co.....		150.00

No.	
441	Phoenix Printing Co. (Ga. R. R. Bank)
442	Addressograph Co.
443	W. C. Lyle.....
444	Postal Tel. Co.....
445	W. C. Lyle.....
446	Phoenix Printing Co.....
447	W. C. Lyle.....

Total.....	\$2,587.59
In bank at present.....	\$1,031.82

Assets.

Balance in bank.....	\$1,031.82
Past due accounts.....	1,222.75
Total.....	\$2,254.57
Deduct—doubtful	\$ 106.00
Net assets	\$2,148.57

To the Council of the Medical Association of Georgia:

We, your Committee, appointed to audit the accounts of our Secretary-Treasurer, beg leave to make the following report:

That, after a careful examination of the vouchers presented from No. 373 to 447, inclusive, together with the statement from the Merchants Bank of Augusta, Ga., we find that the Association has a balance on April 14, 1917, of one thousand thirty-one dollars and eighty-two cents (\$1,031.82). We are glad to state the financial condition of the Association is better than at any time in its history.

For the Council—

W. L. CHAMPION,
V. O. HARVARD,
J. G. TUTEN,
Committee.

Upon motion the meeting adjourned.

W. C. LYLE,
Secretary.

Meeting of Council April 20, 1917.

Meeting called to order by Chairman E. T. Coleman.

Minutes of previous meeting read and confirmed.

Dr. E. T. Coleman was re-elected Chairman of the Board.

Dr. V. O. Harvard was re-elected Clerk.

Dr. W. W. Pilcher was re-elected as a mem-

ber of the Committee on Medical Defense for term of five years.

Upon motion the meeting adjourned.
W. C. LYLE,
Secretary.

Medical Association of Georgia, General Session, April 20, 1917.

The reports of the House of Delegates were received and adopted.

The Association proceeded to the election of officers and the following members were elected:

President—E. E. Murphey, Augusta.
Vice-President—A. D. Little, Thomasville.
Vice-President—E. C. Thrash, Atlanta.

Councillors.

First District—A. J. Mooney, Statesboro.
Second District—C. K. Sharp, Arlington.
Third District—V. O. Harvard, Arabi.
Fourth District—H. W. Terrell, LaGrange.
Delegate to American Medical Association—M. A. Clark, Macon.
Alternate—A. H. Bunce, Atlanta.

A resolution was adopted thanking the citizens of Augusta for the many courtesies extended the Association during its meeting.

Savannah was selected for the next meeting place of the Association.

Upon motion the meeting adjourned until the next annual meeting the third Wednesday in April, 1918.

W. C. LYLE,
Secretary.

The cost to Georgia does not end when the blind children graduate from the Academy. The loss in earning power, and the fact that our blind men and women must of necessity fall far short in normal productivity, has a deep significance in dollars and cents to every community in the state. With a minimum of 1,700 blind men, women and children in Georgia, more than half of whom are needlessly blind, it would seem that there should be no opposition from any quarter, to such preventive measures, legislative and educational, which have proven efficacious in some other states.

Dr. H. H. Martin, of Savannah, who was injured in an automobile accident more than a year ago, resumed his work.

RESOLUTION.

The following resolution has been adopted by several local Societies and with slight modifications is applicable to the conditions existing in any county. We suggest its consideration by every County Society. The cards referred to may be obtained from the publishers of the Journal at \$1.00 per hundred.

"Whereas, A number of the members of the.....County Medical Society are liable to be called to serve their country as surgeons in the army and navy, and

"Whereas, We, as brother members of theirs, realize the sacrifices they make by this response to the spirit of patriotism; therefore be it

"Resolved, That the.....County Medical Society, in session assembled, does hereby pledge its members to dutifully attend the patients of such of its members while serving with the colors, and submit to the representatives of such members as are with the colors a monthly statement of such work as may have been performed for such absent members, together with all fees collected from patients of such absent members.

"Resolved, That no member of this Society shall render a personal bill to patients reported to him as patients of members absent on government service, but shall make a memorandum to the representative of the absent physician, and bill for such service shall be rendered in the name of the absent member.

"Resolved, That the Board of Censors of this Society are hereby empowered to devise a form of memorandum card, copies of which shall be supplied to all members, and a supply kept on hand by the secretary of this Society.

"Resolved, That each member of this Society pledges himself to inform such patients of brother members serving with the colors that the work being done is for such absent members, and bills for same will be rendered in the name of the absent member, and that for a period of six months after the return of such absent member, the physician rendering the service at the time cannot agree to treat such patient except as the patient of the absent member, in an emergency, and according to the rules of ethics governing such cases.

"Resolved, That any violation of the above resolutions shall be reported to the

board of censors and shall by them be considered as a breach of professional conduct, and such member may be suspended or expelled, according to the by-laws governing such cases."

Rules.

1. When a new patient presents himself, the physician staying at home should ask the name of the doctor who last attended him. If this doctor is absent on service, and has left a locum tenens, an attempt should be made to induce the patient to go to the locum tenens.

2. If the last doctor who attended him is on military service, it should be explained to the patient that attendance will willingly be given on behalf of that practitioner and on no other terms.

3. Any attendance on behalf of such patients should be carefully and separately recorded on back of this card, and a list of such attendances sent at monthly intervals to the representative of the absentee.

4. An attempt should be made to ascertain the fees charged by the absentee, and a charge not less than this should be made on his behalf.

5. Accounts rendered on behalf of the absentee should be in the absentee's name, and moneys received should be remitted monthly to his representative.

6. In cases in which the patient's frequent change of physician leads to doubt as to who should be regarded as the regular attendant, the absentee should be given the benefit of the doubt.

7. No patient attended on behalf of an absentee should be attended by the deputy for at least six months after the absentee's return.

8. The greatest discretion should be used as to the introduction of a partner or assistant, or in commencing a new practice in an area from which men are absent on service.

Physicians newly located in a given district should be doubly scrupulous in regard to the practices of absentees, and should at once ascertain and join in any arrangements that have been made for the protection of absent practitioners.

10. In all cases of doubt as to what is the right course of action as regards an absentee, the practitioner should consider what he would like his neighbor to do if he were absent on military service. The local Board of Censors, or the State Committee on Medical Preparedness, are always ready to advise.



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OF THE

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ADDRESS OF WELCOME ON BEHALF OF CITY.

Hon. J. R. Littleton, M.D., Mayor City of Augusta.

Mr. President and Members of the Medical Association of Georgia:

This is a great Association—the Medical Association of Georgia—an Association for the purpose of making stronger and better and more effective the great profession of medicine and surgery. In unity, as you all know, there is strength; and to be able to speak to a body of men in behalf of the city of Augusta, who have come here for the purpose of doing great good, of making the world better, an Association upon whom the destiny of the world depends to a great degree, is indeed a very great pleasure to me. The city of Augusta welcomes you; it could not do otherwise. It extends to you a most cordial welcome, and has shown that it means this welcome because of the interest shown in medical education in Augusta. We have made many sacrifices in order to give you the best medical school possible, as well as a University Hospital—which I trust you will all go to visit and see how these people,

the citizens and physicians together, are working to make you a hospital and medical college second to none in this United States. (Applause.) We know that there is just as much brains in the Southland as anywhere in the world, and I fully believe that you will be leaders in medicine, just as much as in any other line. In fact, you are now. Many of your best men hail from the Southland.

I extend to you a most cordial welcome. I do not fear your getting into any trouble, because the only thing you can find in Augusta is grape juice or pineapple juice or something of that kind; but if you should happen to find some of the other, I will do the best I can to take care of you.

It is hard for you to appreciate just how much strength there is in the physicians of the state. You take a very significant part in all life, from the home of the richest of the nation to the poorest, from the humblest citizen to the President of the United States—your influence is felt, and I am glad to say it is a protective influence. Really, the destinies of this entire nation are with you as you guard the health of the people. You are here in peace—because in peace there is always war, the war that disease is mak-

ing upon the people, and you are there with your splendid guardianship to see that the child, from the time of its conception until it has attained its purpose in life, is guarded and protected from the dangers that come from error. You take care of the child life in school and guard and correct the defects of the little fellow and give him a chance in life, and in that manner save to the world a great many useful citizens. You go further than that, and you see after the health of communities by looking after sanitation, the proper inspection of foods, which is a great and necessary thing in this day with the problems that confront the people. You are there night and day to see that good comes to the community. And after all this you are not allowed to stop there. In war you are there working both night and day, ever ready—you have no eight hours of work; you can not say just how much, or you will not say just how much—you are there ever ready to respond to the call of distress and to use in every way possible your skill and education for the purpose of mending human bodies who may be torn by shot and shell.

And so I say that it is a distinct pleasure to represent the city of Augusta and say to you that from the warm heart of Augusta we bid you welcome. We consider it a very great honor to have you with us, and we hope that your pleasure and profit will be as great as the honor we feel in your presence. (Applause.)

ADDRESS OF WELCOME ON BEHALF OF LOCAL PROFESSION.

**J. M. Hull, M.D., President Richmond County
Medical Society.**

Mr. President and Gentlemen of the Association:

For your second consecutive visit to Augusta I have the pleasure of extending you, on behalf of the physicians of Richmond County, a welcome. At the last annual meeting of the Richmond County Medical Society the members decided that they wanted a year of active work, a year where much aggressiveness and enthusiasm should exist, and, therefore, they wanted a **young** man to accomplish that, and so honored me with its presidency. I do not know that anything but a long life of experience in obedience would allow me to appear before you today,

but being born a Democrat and imbued with the idea that the governed should obey the instructions of the one governing, I am here to extend to you a welcome on the part of the Richmond County Medical Society and to second Dr. Littleton's eloquence and welcome you not only to the city, but to the homes of each and all of us. I am frank to confess that I had very much rather obey the impulses of my own heart and address the members of the Richmond County Society who confront me and extend to them my congratulations that you are here; to tell them something of the magnificence of the work that you are going to do; to point out in some brief way some of the past achievements of this Association; to show how all the work that Dr. Littleton has emphasized, such as sanitation, the inspection of food, the care of the school children, has emanated, not from the mouth of the people of Georgia, not from its legislators, excepting at the instance of this Association, and that everything that has been achieved for good and for the advancement of medicine as a profession—the education of the people in the lines of better living, and provision so that they shall be able to carry out their best usefulness by the correction of defects of childhood as has been done in our school examination—all this has sprung from the suggestions which have been made in this Association, and which likewise have been carried out by the legislature by the splendid influence which this Association as a body possesses. If you have done that in the past, what may we not expect from you in the future? I doubt not but that in this three days' session there will be those who will enlighten us upon measures that they have themselves found most beneficial and, therefore, wish to impart to us, and that they will suggest many measures for the advancement of the state at large and for the respective communities in the state which are represented at this meeting. I also know that in the great national crisis which confronts us the medical men of Georgia will be ready to take their part. For over two years the world has been living through a period of horror. There has been no time within that period when we have not had one shock after another. It is a lamentable fact that the Germans in their prosecution of war have carried on a degree of frightfulness that has passed the traditions of all

history; they have seemed well pleased to put into effect any terrible thing if by so doing they can carry a degree of terror not only to those with whom they are at war, but to innocent nations and people as well. It is a matter of supreme gratification to me that there has been some limitation and reduction to such procedure and that it has been due to what? To the influence of those who have been non-combative, because they stood up for moral laws, for the moral side of life which has had its influence in controlling the savagery that has existed up to the present time. I have mentioned this for one reason, and that is this: I believe the physicians are always above pettiness and littleness and it is a great gratification to me in all the reading and studying that I have had opportunity to do about this conflict, that there is not one line or statement of failure of a physician anywhere in the world in the discharge of his duty to anyone—enemy or friend; that the medical men have stood up as protectors, giving their words of comfort as well as their service in the amelioration of ills, and that this is so with every nation in conflict. I would suggest one other thought, and that is this: There has been for a number of years a very close connection between the medical men of all nations, the barriers of nationality have had no existence in the meetings and councils of doctors. We are indebted to the entire world for an internationalism as physicians that has had, even in this country, no interruption, and that internationalism must still exist. We would truly be unworthy of our profession could we forget for one minute the magnificent contribution, the splendid advancement, the glorious achievements which have been given to the medical world and through it to the entire human race by those whose government has carried on this dreadful warfare against those opposed to her. But let us bear in mind that that internationalism still exists, and it matters not what we may be called upon to do, we as physicians will stand for the preservation of all that is true and all that is good, forgetting nothing but what has been achieved by each of the separate nations, and when we are called upon, as some of us needs must be, to go into the actual conflict, we must go in the spirit of physicians, the spirit that has come down through all the ages from Christ himself—ministering to those who are

in need of comfort, to those who are in distress. I have looked forward to hearing from this body some splendid action taken by it emphasizing and bringing out what we as physicians stand for.

On behalf of the Richmond County Medical Society I welcome you. We sought to have you here, we wanted you here, and we wish that you might always be with us.

RESPONSE TO ADDRESSES OF WELCOME.

Stewart R. Roberts, M.D., Atlanta.

Mr. President, Gentlemen of the Medical Association:

I have sat here and listened to these addresses of welcome, by the Mayor on behalf of the city of Augusta and by Dr. Hull on behalf of the Richmond County Medical Society, and while they were speaking I began to think of the state of Georgia, from which we come, and of which most of us are native citizens, and for which I have the pleasure to respond on behalf of the Medical Association of the state. The Mayor is correct when he says that Augusta ought to be proud of her hospital. The hospital to which he refers is without doubt the best equipped, the best built, and the most modern hospital in the commonwealth, and no people in Georgia have been so awake to building and making a state renowned medically as have the people of Augusta. I would that the people in my own city were so awake to the needs of our people.

I do not believe that anyone who lives in Georgia is ever in bad company, but I do not think that Georgians realize what a state we have. It has been called the Empire State of the South, and in some respects it is beginning to be the Empire State of the Union. (Applause.) One is not without honor save in his own country and among his own people, and one also may be neglectful of his own state, so that his own state is without honor among its own people. One of my distinguished medical friends this morning said that if he had had charge of his birthing, he would have been born in one of the old families of Virginia; I believe he thought he would prefer to have been born in the valley of the Shenandoah; but if I had had my birthing in my own hands, I would have been born, as I was, in Georgia. (Applause.)

We ought all to know how great is our state and how great is the medical profession in our state. I believe that we doctors, without compliment and without flattery, taking man for man and measure for measure, are far ahead of any other profession or any other group of men doing similar work in this commonwealth or in any other commonwealth. What has been true of the medical profession has been true of other lines of human endeavor, and while this is a medical association, I do not think it out of place in my response to say something of the wonderful progress that has been going on along other lines in the state of Georgia. There has been issued from the capitol of our state a small pamphlet entitled, "Georgia Invites You." This pamphlet, which can be obtained by anyone from the Department of Agriculture in Atlanta, was issued by the late commissioner, Mr. Price, and is one of the most wonderful pamphlets that has ever come into my hands.

The state of Georgia has increased in population 100,000 per year. We have about 60,000 square miles. Germany has 208,000 square miles, and if the state of Georgia had the same rate of population per mile as Germany, we would have 19,000,000 within our borders. We shall not have that population in our lifetime, but we shall increase at a greater rate than 100,000 per year so long as all of us here shall live. We have now a population of over 2,800,000. We have taxable property of one billion dollars. Now I do not know how much that is; some of you may. I do not know how much a million is; some of you may. Judge Blackburn once had before him a very eloquent young lawyer who, in arguing a case, kept mentioning one million dollars, a sum involved. Finally the judge said, "Please omit mentioning one million dollars. In the first place, I do not know what it means; I do not know how much one million dollars is. I prefer to use the word 'surplus.' I get the idea better." We use 8,000,000 more bushels of wheat than we produce—and then complain about hard times. If we had a wall around us, a high Chinese wall around us, we could support ourselves with the stuff left over (and I think "stuff" is good rhetoric, too). Our average temperature in winter is 57. Our average temperature in summer is 67. And we have an average of 50 inches of rainfall a year. As high as \$3,000 has been made off of one

acre of land in Georgia from crops. I have one distinguished medical friend who gets \$15 for a crate of asparagus and he raises as fine celery as I have seen. Just as good celery can be raised on the "poor" land down around Atlanta as can be raised in Kalamazoo. We can raise celery and rice, too. We raise 100,000 bushels of rice a year, and we ought to raise enough to supply us all. We raise 62,000,000 bushels of corn in Georgia a year; 1,500,000 pounds of tobacco; 4,000,000 bushels of wheat; 124,000 bushels of rye; 17,000,000 bushels of oats; 375,000 tons of hay; 1,845,000 bales of cotton; 900,000 bushels of Irish potatoes; 7,500,000 bushels of sweet potatoes. More peaches and sweet potatoes than any other commonwealth in the world; we are first in the world in sweet potatoes and peaches. Last year Georgia shipped about 7,000 carloads of peaches. We raised 3,500,000 bushels of peaches last year and 135,000 bushels of pears. We rank fourth in agricultural production in the United States—and then people talk about Texas. The only thing Texas has on us is size. We raise more produce to the square mile than Texas does, but the trouble is that only thirty acres out of every one hundred in Georgia is cultivated. Seventy per cent of our land is not cultivated. That per cent applies in Northern Georgia, but when you come to Southern Georgia, which, when the Lord made, He smiled, that proportion is high. In Southern Georgia only about ten to twenty per cent of the land is uncultivated. We are first in the production of sweet potatoes; second in the production of sugar cane; third in watermelons, and ninth in swine. We raise 100,000,000 pounds of meat a year, and we import 6,000,000 pounds of meat a month, or 72,000,000 pounds of meat a year. We could raise it. We have 5,000 manufacturing plants in the state of Georgia. Augusta was the first manufacturing city in the state. We have 115,000,000,000 feet of uncut lumber in Georgia, and in 1910 we had 2,000 sawmills working at one time. In 1910 we cut 1,345,349 feet of timber, which the state sold for \$17,000,000. The timber center of Georgia is Thomasville. Year after year we ship thousands of feet of lumber out of the state that is made into street cars and then shipped back to Georgia. We are a very wise people. We are killing in Georgia, in just a few packing plants, 100,000 Georgia

hogs and 50,000 beeves a year, but remember that we bring 6,000,000 pounds of meat into the state each month. We raise for educational purposes over \$8,000,000 a year, and that amount is increasing every year. We have numerous colleges and universities, one of which is located in Augusta and of which we are very proud. There are only ninety-five medical colleges in the United States, two of them in Georgia, both class A schools. At the last meeting of the American Medical Association in Detroit, the chairman of the Committee on Medical Education spoke of the medical college at Augusta and also of the college at Atlanta and both of these were mentioned in the highest terms and published in the bulletin of the American Medical Association. He did not make such complimentary remarks about some other states. Now, Mr. Chairman, I regret to have made such a rambling response to the addresses of welcome, but I am proud of Georgia; I am proud of my fellow medical men in Georgia, and I am proud of our medical colleges. We are glad to be here; we are glad to come to Augusta. People have been coming to Augusta for two hundred years. Northern Georgia started through Augusta. Atlanta does not deserve much credit for starting, for the railroads had to come through the country some way, and they just happened to come through Atlanta; but really, she has done very well since.

**"SINS OF OMISSION AND COMMISSION
OF THE GENERAL PRACTITIONER
OF TODAY."***

C. K. Sharp, M.D., Arlington.

This will be brief, and I trust to the point, and will serve as a means of delivering myself of some criticism of faults common to our exalted profession, and through these criticisms—which are intended in the kindest spirit—to benefit we who are subjected; and if I can say one word that will make for the betterment of the profession or any individual member thereof, and at the same time will cause us to take our bearings and act in a more circumspect manner in our

dealings with our patients and their ills, I shall feel amply rewarded for my efforts.

Some one has said, "We make mistakes; other people commit sins." A wrong diagnosis after due examination (a thing that happens to all of us) is a mistake and a pardonable one; a wrong diagnosis arrived at without due examination (a thing that happens to the other fellow) is a sin; medically speaking, an unpardonable sin. That an examination is not allowed is no excuse for a wrong diagnosis. If you can not convince a patient that an examination is necessary, quit the case; it is better to lose a patient than to lose a reputation. Moreover, do not treat first and examine afterwards, for then you may be called on to treat not only the disease, but the effects of your own treatment. After an examination is made, if still in doubt admit it. If you do not know enough about the case to satisfy yourself, it is not safe to assume that you know enough about it to satisfy the patient. This is not only indifferent ethics, but bad policy.

My observation leads me to believe that the fault lies in the haphazard way some of us go about physical diagnosis; want of a systematic inquiry into all the details of family history, personal history, past and present history, and the painstaking use of all the five special senses, and the instruments of precision generally at our command. This is probably the cause of most of the failures at accurate diagnosis, so vitally essential to proper and oftentimes successful treatment where otherwise a fatal issue would be the result. I am loath to believe that it is due to a want of teaching and practical bedside demonstration in the methods of physical diagnosis; especially the latter-day graduates in medicine from class A institutions, but to a habit of carelessness, indifference, or, want of interest in many of us.

The fault is doubtless most common in rural communities where we are looked upon as the **wise men**, it would seem, specially endowed with all the powers supernatural, poorly paid, overrated by the laity, dealing with not only all the perplexing problems of the internist and other specialties, but everything in the surgical line from a nail prick to hip-joint amputation; sometimes, in an emergency invading the "sacred cavities," these "Holy of Holies," where none but the pure in heart, specially prepared and talented, robed in garments white as, or, should

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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be allowed to enter. But fortunately for the patient, these entries are not frequent, but, like unto the High Priests of old, who enter therein at long intervals to make their sacrifices. This may be too severe an arraignment, for it would surprise our hospital-bred brother of the scalpel to know what splendid results we occasionally get amid surroundings he would deem prohibitive.

How frequently do we hear of patients dying or being critically ill, with some symptom expressed as a disease entity, when merely a symptom of some underlying disease that is not recognized and the proper basic principles not applied for its alleviation or cure. I do not know whether you gentlemen of the more populous centers encounter this fault, but we of the rural districts and smaller towns and cities see a growing tendency along this line.

I want to mention a few pseudonyms that are in common use among us. Chief of these is the term "Acute Indigestion," used to express a disease per se. Have searched all textbooks and can nowhere find it expressed as a disease entity. Acute indigestion is merely a symptom of a stomach overtaxed with undigested or indigestible substances, and an emetic or the stomach tube will relieve it. Will relate a concrete example: Was called to a child 8 years of age, who was seized with convulsions followed by deep coma which lasted eighteen hours, persistent emesis, pulse almost imperceptible, temperature two degrees subnormal, pale, cold, clammy skin, enlarged spleen, pain evidently over the epigastrium, with a history of tertian malarial paroxysms, the last a month previous. Prompt and vigorous anti-malarial treatment brought about speedy relief. Another child in the same family a year before had practically the same symptoms which were diagnosed and treated as acute indigestion, with fatal results. The fortunate outcome of my case had a happy and enlightening effect on the parents and bystanders.

Before pronouncing a case acute indigestion, let us be sure of our ground and ascertain if we have not a case of malaria with gastric symptoms, syphilis with gastric crises, cerebral hemorrhage, hepatic or gall bladder disease, peptic or duodenal ulcer, malignancy, or likely some disease of some remote organ, as uterine, ovarian or appendiceal troubles.

"Indigestion" is a term too broadly and

complacently used to express conditions that may be in reality tuberculosis, renal, hepatic, cardiac, or malignant troubles.

The term "Acidosis" has finally gotten on the tongue of the laity; and it is quite a common occurrence to be called to some one with a ready-made diagnosis of acidosis. I asked an estimable lady recently where she learned about acidosis; she said a doctor in a distant city said the child came very near having this "new disease" so fatal to children. The discomforting part of it was that my statement to counteract the impression she had received concerning this "new disease" had no effect on her mind, but she was good enough to spread a mantle of charity over my ignorance.

Let us quit the use of such terms as liver trouble, heart, kidney and bladder trouble, and lung trouble; the latter a soft pedal for consumption, whether recognized or not, and we are not doing our duty to our patients when we pass them up with these terms without going into a thorough investigation of their conditions and consciously applying the proper treatment.

These few obsolete terms are mentioned as mere introduction to a subject that could be multiplied many times over, and to mention more would be tiresome to you. But I want to make this solemn plea: Let us practice honest medicine; tell all the facts in regard to a given disease, unless, for some valid reason secrecy is necessary; enlighten the lay mind, instead of spreading such a shroud of mystery over our actions, always remembering to instruct them in measures prophylactic, where disease is preventable. Then only will we get the confidence and sympathetic co-operation of the people, and, more worthily command their respect. Then we will indeed be doctors, a synonymous term for teachers, and not "Docks," a favorite name for darkeys and the meek and lowly mule. I believe it was Cathell, in his treatise on "The Physician Himself" who says: "When a physician is universally known and addressed as Dock, his usefulness is gone, and he had better change his location"—and I agree with him.

I dare say none of us are equipped, and very few competent to make laboratory diagnoses, but if we were, the exacting and time-consuming duties at the bedside of the general practitioner, would deprive him of the time and most likely the inclination, but we

can and should at least refer our specimens to our friends specially trained and equipped for this important work; personally, would rely more on his report than my own investigations.

Then let us hasten the dawn of that ideal day when we can by the scientific use of all the means at our hands, a thorough knowledge of the chemistry of the human organism, an intricate knowledge of all the internal secretions and their relation to the different bodily functions, ability to interpret all abnormalities, and the necessary steps to restore them to normal activity, then will our diagnoses and prognoses be scientifically accurate.

Westosky Bldg., Arlington, Ga.

DISCUSSION OF DR. SHARP'S PAPER.

Dr. M. A. Clark (Macon): I wish to heartily endorse the list of sins Dr. Sharp has mentioned, and I would like to add a few that I think we as physicians are guilty of, and one of these is to omit to do more studying as the days go by. We begin so early to excuse ourselves, to say that we are too busy to study, that there are so many interruptions. He said that so few people make laboratory diagnoses. It is even more important to make interpretations of the reports from the laboratory than to be able to do laboratory work. Another great sin of omission, it seems to me, is that we omit to have system, to be systematic in our work. We could accomplish so much more, and with so much more ease, if we would study system. And while it has been the custom of the profession that we should look wise and say nothing, another sin of commission is that we make slurring remarks of criticism about something that has been done by a fellow practitioner, and in my short experience on the Council of Medical Defense nearly all of the troubles have been the result of some physician making criticizing remarks concerning the treatment by some brother physician. If we would just omit that, we would fail to commit a great sin and we would save trouble for our Committee on Medical Defense.

Our essayist says we must educate the laity. I am persuaded that he did not mean to educate them too much. "A little learning is a dangerous thing," and while we may have drunk deep of the Pierian Spring, the

average layman has not, and we must use a terminology that he understands. For myself I would just as lief say that my patient died of dropsy as acidosis. As we study more and become wiser we will be better diagnosticians and better able to get at the real disease itself, and hence be better able to serve our constituency, and certainly to the satisfaction of ourselves as physicians.

Dr. C. K. Sharp (closing): I want to thank Dr. Clark for his remarks. I think my remark as to the education of the laity should be interpreted along prophylactic lines. Of course, they can not grasp general medical subjects, but I do not think we can educate them too much in regard to the prevention of disease.

THE TENDER HEEL.*

Theodore Toepel, M.D., Atlanta, Ga.

A number of different pathological conditions may produce a tender heel, either upon the posterior or the plantar surface. The cause may be a bursitis aroused by muscular action, but more commonly it is a periostitis or an exostosis of small size, either at the posterior part of the heel or upon the plantar surface following gonorrhea. Occasionally these outgrowths will be upon the sides or at the insertion of the tendo-Achillis. Such growths are best revealed by a lateral X-ray shadowgram. They may arise either from traumatism or from sudden muscular action, with tearing up of the periosteum and deposition of new boney matter. The increased pull upon a gastrocnemius may also cause Achillodynia. Other forms of calcaneal periostitis will also give this result. This reminds me of a case, a young friend of mine and I were participating in an athletic contest composed of running and jumping; an injury developed as a result of a long jump, due possibly to some excessive muscular contraction; it had either produced a fracture or calcaneal epiphysitis sufficient to cause great inconvenience, limping and great pain. My friend walked upon the outer side of the foot, and any attempt of the exercises which were previous to this accident done without any inconvenience, would disable him for weeks.

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McAllister's Anatomy says that the calcaneum ossifies from a single center which appears about the sixth fetal month, but that there is an epiphyseal crust which forms posteriorly from the eighth to the tenth year and which consolidates about the sixteenth year. Violent muscular action of the powerful gastrocnemius may separate this epiphysis or tear up the periosteum.

Bursitis-traumatic, gonorrheal, infectious or otherwise, beneath the insertion of the tendo Achillis will often produce Achillodynia with pain and sensitiveness and will be very disabling, especially if thickening or effusion occurs. Occasionally an inflammation of the bursa superficial to the tendon will occur from traumatism or from infection from chafing of the shoe. When the pain is beneath the heel it is sometimes associated with flat-foot and the pain will be located not only in the sole, but may extend up the leg.

I have seen this condition develop in a young man of 20 years of age, following directly a case of acute gonorrhea, and in such an intense form that for months standing and walking were absolutely impossible. After six months of unsuccessful treatment it was possible to restore his ability to work by inserting at the painful area a hollow steel support covered with felt, thus relieving the pressure upon the affected part. During the first months he was so helpless that he was compelled to put on this padded shoe before he could get out of bed. Gradually the pain disappeared under the influence of the continued relief in connection with the specific treatment.

Chafed heels from shoe friction will give great discomfort and often disable an army on the march. Frequent cold bathing, alcohol and dusting powder, with protection by adhesive plaster will greatly relieve. Blisters should be cut away, aseptized, dressed with carbolated ointment, and the area protected from pressure by cotton gauze padding. Change of shoes is helpful.

Osteomyelitis and otitis as the result of an injury or infection are frequently found in children under 10. The violent septic symptoms will be the same as those of acute osteomyelitis in other bones with local symptoms centering at the heel. The diagnosis from tuberculous infection is marked by the violence of the symptoms. In infected crush wounds of soft parts and bone, it is some-

times impossible to decide as to the existence of calcaneal infection except by the X-ray.

Pain in the heel may also be caused by lesions which are at a distance, as from urethral stricture, vesicle calculus, cysticoprostatitis, inflammation of the neck of the bladder, cystalgia, or neuralgia of the neck of the bladder, which, in some cases, may be mistaken for bladder stone, renal calculus, and locomotor ataxia. It may also be present in pregnancy (Brodie, Thompson, Keyes, Gonley, Segun and Buzzard).

Treatment.—In osteomyelitis, immediate opening of the cancellous tissue through a lateral incision should be made to relieve tension, the diseased focus gouged, irrigated, mopped with pure carbolic acid or tincture of iodine and alcohol and thoroughly drained. If a sequestrum has formed later, it should be removed and a partial subperiosteal resection done. In children positive reproduction may be expected if the posterior epiphyseal juncture is intact and periosteum is saved.

In cases of tender heel that are only disabling relief may be afforded by an outside rubber heel and an inside cushion of rubber sponge shaped to accommodate the tender plantar area or the posterior sensitive region, aconite or belladonna with acetanilid or chloral and camphor, equal parts, applied locally will relieve pain.

Sprain and strain will be relieved by a close-fitting plaster cast. Pressure and partial restriction of motion can be secured by full adhesive plaster strapping.

Gonorrheal or other exostoses, as revealed by the X-ray, are chiseled away level with the periosteum, the incision being planned so as to avoid as much as possible subsequent weight-bearing or posterior friction from the shoe. In gonorrheal achillodynia the primary infection must be sought and treated. If effusion occurs it may be aspirated. If suppuration takes place, incision and drainage are necessary.

From direct injury, or strain or partial rupture of fibers, the tendon above the heel may become tender and painful, especially on motion. Rest, adhesive plaster, strapping and progressive cases plaster cast fixation of ankle will speedily benefit.

Sprain of the Plantaris Tendon, known as "tennis leg," may occur with or without rupture and should be similarly treated.

If rupture of the Tendo-Achillis or of the gastrocnemius occurs, it should be at once sutured and the foot fixed in an equinus position for several weeks, after which gentle massage and muscular movements will be necessary.

DISCUSSION OF DR. TOEPEL'S PAPER.

Dr. Asbury Hull (Augusta): The Doctor has gone into the subject so thoroughly that there is very little left except to emphasize the fact that all these cases demand careful study. I think in a large percentage of cases of painful heel a Wassermann would throw considerable light. The diagnosis is not always as easy as you might be led to believe from the Doctor's paper. In those cases where there is gonorrheal infection the trouble is the treatment depends upon the diagnosis, and I think in all these cases what he says ought to be borne in mind; that we ought to take X-ray pictures because this is a valuable aid to diagnosis. So I would emphasize the care that ought to be given to diagnosis, and then after the correct diagnosis be sure of your treatment. This is all I care to say.

Dr. R. C. Woodard (Adel): I want to discuss this paper a minute by reason of the fact that I have recently had an experience with painful heel. As you gentlemen know, these patients with painful heel will come to you and tell you that they hurt a little, but from what you can see there does not seem to be much the matter. My case was one of those—a lady 35 years old, who weighed two hundred and fifty pounds—and I was called to see her, sick in bed. When I began to question her, she said, "There isn't a thing the matter with me but a pain in my heel," but she was crying like she had colic. She said she had been told to apply tincture of iodine and she had tried that; then she applied a poultice and finally some ice, but she was still suffering from a pain in her heel. I gave her an H. and C. tablet, which was about all I could do, but about 12 o'clock that night I was called again, and she was still suffering with a pain in her heel. This continued for seven or eight days, and in the meantime the Marion County Medical Society met in my home with twenty-two physicians in attendance, and I went and told them about this case and they gave me the laugh. But I went on with my treat-

ment, giving morphia, and finally had this picture made. I found a little bursa, and I gave her a general anaesthetic and opened this heel. Before doing this, however, I inserted an aspirating needle and withdrew from this little bursa a small amount of transparent fluid. On opening this heel I dissected out a bursa as large as a medium-sized marble and left an opening in this heel as large as a pinhead. I washed it out with iodine and left it open, packing it with gauze. That was Monday morning, and I left Monday afternoon, but she said she felt first rate except that I had packed it too tight. This is a most interesting case, because I never had anything before that I could not find something about it somewhere in the literature, and when I saw on the program Dr. Toepel's paper I looked again, but I could not find anything at all touching upon it except a little paragraph in Orthopedic Surgery. It has been a very great pleasure to hear this paper, and I hope that a year from now I will be able to tell you that this woman is living and well and without a painful heel.

Dr. Toepel (closing): There is nothing else to add except to bring out the point which was emphasized, that of very careful diagnosis before you begin treatment. Let the pathologist and roentgenologist come to your aid in making your diagnosis. It is very important, and after you have thoroughly convinced yourself as to the cause of that little thing (which to your mind may be a little thing, but which is really very important), a painful heel, you will find that you will have in many cases more to do than you are capable of doing to give the patient relief and make him comfortable. I would emphasize—be careful and very thorough in your diagnosis of painful heel. I thank you.

What shall we do in regard to this? Shall we sit supinely and watch this annual procession of our Georgia boys and girls wending their way along dark pathways to our State Academy for the Blind, or rather shall we not en masse put ourselves on record for the early adoption of a law and regulations which will gradually reduce blindness from this cause in Georgia, as it is doing in other states? A movement looking toward legislation of this nature has already achieved considerable headway.

THE JOURNAL

OF THE

Medical Association of Georgia

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MEDICAL ASSOCIATION OF GEORGIA.

Official Minutes of the Sixty-Eighth Annual Session, Held at Augusta, Ga., April 18, 19, 20, 1917.

The sixty-eighth annual meeting of the Medical Association of Georgia was called to order on the morning of Wednesday, April 18th, at 10:30, by the President, Dr. J. G. Dean, of Dawson.

Invocation by Rev. Howard T. Cree, pastor First Christian Church.

Address of Welcome on Behalf of the City, by Hon. J. R. Littleton, M.D., Mayor of Augusta.

Address of Welcome on Behalf of the Local Profession, by Dr. J. M. Hull, President Richmond County Medical Society.

Response to Addresses of Welcome, Dr. Stewart R. Roberts, Atlanta.

Report of the House of Delegates, read by the Secretary, Dr. Wm. C. Lyle.

Moved by Dr. Pilcher that the reading of the detailed report be omitted. Seconded and carried.

Moved by Dr. M. A. Clark that the report be adopted. Seconded and carried.

Dr. C. K. Sharp, Arlington, Ga., read a paper on "The Sins of Omission and Commission of the General Practitioner of Today." Discussed by Dr. M. A. Clark, Macon, and Dr. Sharp in closing.

Dr. Theodore Toepel, Atlanta, read a paper on "Painful Heel." Discussed by Dr. Asbury Hull, Augusta; Dr. R. C. Woodard, Adel, and Dr. Toepel, closing.

Dr. E. M. Green, Milledgeville, read a paper on "The Classification of Mental Disorders Adopted by the Georgia State Sanitarium." Discussed by Drs. H. D. Allen, Milledgeville; N. P. Walker, Milledgeville; Y. H. Yarborough, Milledgeville.

Dr. John Funke, Atlanta, read a paper on "Endothelioma of the Kidney." Discussed by Dr. Everard Wilcox, Augusta.

Wednesday Afternoon Session.

Called to order at 2:30 by the President.

Dr. S. T. Barnett, Atlanta, read a paper on "Treatment of the Nausea of Pregnancy." Discussed by Dr. L. S. Hardin, Atlanta, and closed by the essayist.

Dr. J. O. Elrod, Forsyth, read a paper on "Patent Medicines and Quacks." Discussed by Drs. W. B. Hardman, Commerce; C. I. Bryans, Augusta; J. E. Anderson, Columbus; M. A. Clark, Macon; T. J. McArthur, Cordele.

Dr. W. W. Blackman, Atlanta, read a paper on "Intensive Fattening—Some Results in the Abdomen." There was no discussion of this paper.

Dr. R. M. Harbin, Rome, read a paper on "Review of Two Hundred Operations for the Acute Abdomen, With Fifteen Deaths." Discussed by Drs. O. H. Weaver, Macon; R. C. Woodward, Adel; A. J. Mooney, Statesboro; George R. White, Savannah; W. B. Hardman, Commerce; A. D. Little, Thomasville; C. I. Bryans, Augusta; T. J. McArthur, Cordele; J. M. Anderson, Columbus; L. S. Hardin, Atlanta, and the essayist in closing.

Dr. E. C. Davis, Atlanta, read a paper on "The Importance of Careful Preliminary Examinations Before Surgical Operations." Discussed by Drs. George R. White, Savan-

nah; Garnett W. Quillian, Atlanta, and the essayist in closing.

Dr. F. K. Boland, Atlanta, read a paper on "Traumatic Rupture of Viscera Without External Wound." Discussed by Drs. H. S. Munroe, Columbus; O. H. Weaver, Macon.

Dr. C. W. Roberts, Atlanta, read a paper on "Subparietal Injuries of the Intestines and Kidney; Report of Cases." Discussed by Dr. A. J. Whelchel, Cordele, and by the essayist in closing.

Dr. W. L. Funkhouser, Rome, read a paper on "Acidosis." Discussed by Drs. Geo. C. Mizell, Atlanta; A. G. DeLoach, Atlanta, and the essayist in closing.

Wednesday Evening Session.

Called to order at 8:30 by the President.

Dr. George W. Crile, Cleveland, Ohio, read a "Discussion of Certain Borderline Problems (a) Cholecystectomy vs. Cholecystotomy—with notes on technic and complications; (b) Treatment of Gastric and Duodenal Ulcer; (c) Relationship of the Thyroid to Exophthalmic Goiter." No discussion.

Dr. George M. Niles, Atlanta, read a paper on "Early and Late Gastric Cancer as Shown by the X-Ray" (Lantern Slide Demonstration). No discussion, except by the essayist in closing.

Dr. J. L. Campbell, Atlanta, read a paper on "Tumors and Cysts of the Gums and Jaws" (with lantern slides). Discussed by Dr. Everard Wilcox, Augusta, and closed by the essayist.

Dr. J. S. Derr, Atlanta, read a paper on "The Value of the X-Ray in Diagnosis of Pathology in the Stomach, Duodenum and Appendix." Discussed by Drs. George M. Niles, Atlanta; W. A. Cole, Savannah, and L. S. Hardin, Atlanta.

Thursday Morning Session.

Called to order at 9:30 by the President.

The President read the following telegram:

"Birmingham, Alabama.

"Georgia State Medical Association:

"Greetings! Hope you are having a great meeting and everybody having a good time. In the name of our great Southern Medical Association I extend your every member a most cordial invitation to attend our Memphis meeting in November. We will never forget what the Georgia doctors did for us last November. You made our Atlanta meeting a great success. Come and help make the Memphis meeting another glorious success.
SEALE HARRIS."

Dr. George C. Mizell, Atlanta, read a paper (written by Dr. Mizell and Dr. G. Pope Huguley, jointly) on "Gastric and Duodenal Ulcers." Discussed by Drs. E. G. Jones, Atlanta; George M. Niles, Atlanta; J. T. Rogers, Savannah; F. K. Boland, Atlanta, and the essayist in closing.

The President read the following telegram:
"Sickness in family prevents me from being with you.
A. B. MASON."

The four following papers were read as a symposium: "A Modification of Noguchi's Complement Fixation System," Dr. Lee Howard, Savannah; "Observations on the Preparations of Substances for Intraspinal Injection in Syphilis of the Central Nervous System," Allen H. Bunce, Atlanta; "Intraspinal Therapy in Syphilitic Disease of the Nervous System," Dr. Lewis M. Gaines, Atlanta; "Syphilis of the Nervous System and Its Treatment," Dr. James N. Brawner, Atlanta. These papers were discussed by Drs. J. O. Anderson, Columbus; E. S. Osborne, Savannah; E. B. Block, Atlanta; Stewart R. Roberts, Atlanta, and by the essayists in closing.

Moved by Dr. Oertel that the paper of Major C. C. Harrold, Macon, be made the first order of business of the afternoon session. Seconded and carried.

The President read the following telegram:
"Regret that urgent business will prevent my presence with you.

"THOMAS J. CHARLTON."

Moved by Dr. J. O. Elrod that following the President's address further papers be read in this session. Seconded and carried.

Dr. J. G. Dean read the President's address and it was discussed by Drs. W. W. Pilcher, Warrenton; D. T. Henderson, Macon; J. G. Dean, Dawson; E. C. Davis, Atlanta; M. A. Clark, Macon; Frederick B. Palmer, Atlanta; Stewart R. Roberts, Atlanta; W. B. Hardman, Commerce; H. W. Terrell, LaGrange; J. L. Campbell, Atlanta.

Following the President's address Dr. Stewart R. Roberts introduced the following resolution and moved its adoption. Motion seconded and carried.

"Resolved, by the Medical Association of Georgia in the 68th annual meeting, Augusta, April 19, 1917:

"1. It is the sense of this Association that the tax on college endowments should be lifted.

"2. That by so doing medical education in the state may be fostered."

Dr. A. J. Mooney, Statesboro, read a paper on "Extra-Uterine Placental Growth." No discussion, except the essayist in closing.

Dr. J. C. Logan read a paper on "A Case of Superfoetation." No discussion.

Thursday Afternoon Session.

Called to order at 3 o'clock by the President.

Major C. C. Harrold, M.D., Macon, read a paper, "Southern Surgeons for Southern Soldiers." Discussed by Major ——— Jungman, Drs. T. E. Oertel, Augusta; E. C. Davis, Atlanta, and Major Harrold in closing.

Dr. O. D. Hall, Atlanta, read a paper on "Radium as a Therapeutic Agent for Cancer of the Cervix and Uterine Hemorrhages." Discussed by Dr. L. S. Hardin, Atlanta.

Dr. J. H. Honan, Augusta, read a paper on "Heart Strain." Discussed by Drs. O. H. Weaver, Macon, and C. J. Montgomery, Augusta.

At this time Dr. M. A. Clark offered a motion that for the remainder of the sessions discussions of papers be limited to three minutes for each individual, not to exceed twelve minutes for each paper. Seconded and carried.

Dr. Stewart R. Roberts, Atlanta, read a paper on "Hypertension." Discussed by Drs. W. L. Davis, Albany, and E. S. Osborne, Savannah, and W. R. Houston, Augusta.

Dr. J. E. Paullen, Atlanta, read a paper on "Dietetic Treatment of Typhoid Fever." Discussed by Dr. A. Elkin, Atlanta.

Dr. W. R. Houston, Augusta, read a paper on "Prescription Writing." Discussed by Drs. J. E. Paullen, Atlanta; Stewart R. Roberts, Atlanta; Geo. M. Niles, Atlanta; Frederick B. Palmer, Atlanta, and E. G. Jones, Atlanta.

Dr. F. G. Hodgson, Atlanta, read a paper on "Treatment of Infantile Paralysis." Discussed by Drs. Frederick B. Palmer and Theodore Toepel, Atlanta.

Friday Morning Session.

Called to order at 10:15 by the President:

Report of House of Delegates read by the Secretary, W. C. Lyle.

Moved by Dr. J. O. Elrod that the report be adopted. Seconded and carried.

Dr. W. A. Cole, Savannah, read a paper on "Exophthalmic Goiter With Special Reference to Etiology and Roentgen Ray Treat-

ment." Discussed by Dr. Geo. R. White, Savannah.

Dr. T. Byron King, Sandersville, read a paper on "X-Ray Therapeutics; Report of Cases." Discussed by Dr. E. C. Thrash, Atlanta; Dr. W. A. Cole, Savannah, and Dr. T. Byron King, Sandersville.

Dr. E. G. Jones, Atlanta, read a paper on "Some Aspects of Renal Surgery." Discussed by Dr. C. E. Dowman, Atlanta; Geo. R. White, Savannah; F. K. Boland, Atlanta; Frederick B. Palmer, Atlanta, and C. I. Bryans, Augusta.

Dr. E. S. Osborne, Savannah, read a paper on "The Relation of Focal Infections to Ocular Diseases." Discussed by Dr. J. B. Graham, Ellijay.

Dr. J. B. Graham, Ellijay, read a paper on "Vaccines and Protein Sensitization and Desensitization in Diagnosis and Treatment." Discussed by Drs. A. H. Bunce, Atlanta; E. S. Osborne, Savannah; E. C. Thrash, Atlanta; Frederick B. Palmer, Atlanta, and the essayist in closing.

Dr. C. E. Dowman, Atlanta, read a paper on "Emergency Head Surgery." Discussed by Drs. W. A. Selman, Atlanta; W. E. Persons, Atlanta; E. S. Osborne, Savannah; C. J. Montgomery, Augusta, and the essayist in closing.

Dr. W. A. Selman, Atlanta, read a paper on "Major Operations Under Local Anesthesia." No discussion.

Dr. George R. White, Savannah, read a paper on "Septic Infarcts of the Kidney." No discussion.

Dr. E. C. Thrash, Atlanta, read a paper on "The Benefits, Limitations and Dangers of Artificial Pneumothorax." Discussed by Dr. A. H. Bunce, Atlanta.

The more money The Journal of the Medical Association of Georgia makes out of its advertisements the less it costs the State Association to run the paper. This means that every member of the State Association has an interest in the advertising columns. If one business firm advertises and another does not, patronize the one that does. It is money in your pocket.

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PATRIOTISM AND DOLLARS.

With the calling to active duty as medical officers, of large numbers of patriotic practitioners of medicine now in private life, an acute and grave economic question arises which is of the greatest importance, not only to them, but to the profession at large.

These men, whom motives of pure patriotism have induced to volunteer their services to the country in its hour of military need, will be abruptly separated from their practices in civil life, which have been built up by years of labor and by demonstrated professional efficiency and high repute.

Many of them, on entering upon their military service, will receive pay and emoluments financially far less than their present income in civil life. In many instances they will have families to support and offices which they will desire to retain.

The war then will mean to such a very considerable financial sacrifice, and deprivation in many ways to their dependents. It will call upon many physicians to make good the difference between the necessary expenses of their dependents and their army pay, from their private resources. This in a way, and within reasonable limits, is one of the sacrifices which as good citizens they should make for their country. Other professional men, as lawyers, architects, engineers, etc., will be called upon to do the same.

But the professions are under a serious handicap in this respect as compared with the commercial branches of civil life. The doctor, for example, has invested his capital in mental training and mental development which he alone has the power to transmute into financial returns and the comforts of life. If the exercise of this mental development is brought into abeyance, or if it be financially rewarded to a less degree, no part of the capitalized education temporarily directed to military purposes can be employed to the advantage of the income of the individual.

The reverse is true of officers who enter the military service from capitalized commercial pursuits. Here their money has been invested in real property or commodities, and this capital can be turned into money or managed by others so as still to afford an income to supplement the army pay. A business partner, a relative, or a hired agent may conduct the business. A line officer from commercial life may, therefore, with his army pay in addition to his business income, be better off financially after he enters the military service than he was before.

The sacrifices which the professions are called upon to make for the privilege of rendering patriotic service are, therefore, greater than those demanded of the commercial classes of similar social status in civil life. This is inevitable, but it may be mitigated.

Also the doctors who enter the service feel that their practices may be absorbed by their competitors who remain behind in civil life, while they themselves risk their lives at the front and they are naturally apprehensive lest, on returning home after the war, they will find their practices dissipated and lost. This, to many, is a very cogent argument against giving their services to the government and one in which all must recognize the existence of a certain degree of justice. It ought not to be impossible for the profession to remove, at least, a part of its force by co-operative action, rather than allow it to remain exposed to competitive danger.

The co-operation suggested becomes far more practicable and necessary as a result of the compulsory service law, which renders all doctors—and not volunteers alone—within certain limits of age and physical efficiency, liable to give the nation military service at call. If not enough doctors offer their services to meet the needs of the government, enough others to make up the deficiency will surely be drafted. If the present war in which we are engaged lasts any length of time, the probabilities become almost a certainty that such draft will be extensive. No one can foretell where the lot may fall. He

who profits now from the practices left by those who have volunteered, may soon find himself be called to the colors. Co-operative action is necessary by the profession, for neither the patriotic offer of the volunteer nor the obligation of the drafted to perform service should be allowed to be capitalized to the profit of those of the profession who, for one reason or another, may remain at home. Medical men by many thousands will be affected.

The problem is too great and too widely spread to remain without attempt at solution by the profession at large. This attempt should be inaugurated without delay through the various medical societies and the American Medical Association.

The following general action is suggested:

(a) That medical societies shall, by formal resolution, declare that their members absent on military duty are on the same status as if on vacation or other absence.

(b) That they shall so declare themselves, in cases where such action is requested by a member about to leave for service, as the custodians and guardians of his practice while so absent.

(c) That they shall examine the books of such departing member and shall list as part of his clientele, all persons or families to which he has rendered professional treatment within two years.

(d) That they shall in such instances, and so far as practicable, direct and designate certain of their members who are to stay at home, to take over all or any part of the professional work which may develop from this clientele. In this way, also, the interests of the prospective patients will be safeguarded by the reputable and qualified.

(e) That they shall require from each member so remaining and designated as a **locum tenens** a written agreement that from any funds received from the listed clientele of the absent medical officer during his absence, 40 per cent shall be banked to the

credit of the latter through a representative of the society, while 60 per cent may be retained by the physician performing the professional service.

(f) That when the medical officer returns from the war to his private practice his clientele will, so far as the society can bring it about, be returned to him by those who have given it professional service during his absence with the colors.

(g) That any physician who has thus been designated by the society as a **locum tenens** and who fails to live up to his agreement therewith, shall be disciplined by the society—not excluding expulsion from membership.

By some arrangement like this, the physician who puts on the uniform, he who remains behind, the profession at large, the welfare of the patient, and the interest of the nation will all be equally safeguarded.

FIRST AT THE FRONT.

Already the newspapers are carrying items about this or that organization, or branch of the service, which it is expected will have the distinction of being first to serve in France.

We should like to remind the gentlemen of the press that this question is one which is already settled. While others have been talking and preparing, the Medical Corps of the Army has been **doing**, as a result of previous preparation.

It had numerous representatives abroad as official observers and on leave before the declaration of war by this country.

It took over the management of certain hospitals in France when war was declared.

It has since sent over large numbers of medical personnel, not only for service as individuals, but as part of numerous sanitary formations, organized as required for the military forces of the United States, of which they are an official part.

Its representatives have for some time been at the front in large numbers—and they will

be there in much larger numbers before any other branch of the service sets official foot on the continent of Europe.

The work and efficiency of the Medical Department is too often overlooked or disregarded. We propose to establish the fact beyond question, and once for all, that in this war it was the Medical Department which was "first at the front."

WHAT ARE YOU DOING TO HELP?

You who read this page are in all probability medical officers of the services, regular or reserve militia.

You are prepared to do your duty, as a citizen, patriot and humanitarian. Whatever befalls, you can be relied upon to give the best that is in you. If you are not already under orders, you are awaiting them. And they will not long be deferred.

But more is required of you than your personal service in the military establishment. There are not enough of you to wear the uniform. The Army Medical Department urgently needs more officers. It needs them not by hundreds, but literally by many thousands. And it needs them at once.

Recent military legislation requires the immediate creation of a land force of about 1,200,000 men. It provides for a further addition of over 600,000 men. Those who are best informed are convinced that the creation of this entire force of nearly 2,000,000 men, including non-combatants and attached civilians, will be necessary without delay.

The proportion of medical officers to the rest of the Army, in time of peace, is fixed by law at 7 per 1,000. In time of war, at least 10 per 1,000 are imperatively demanded, with a further reserve to meet wastage, emergency and the multifarious duties of home service. You can figure for yourselves

how many thousands of doctors the land forces of the United States not only ought to have, but must have.

Perhaps the most valuable service you can render to your country is to rally all the medical men you can to care for those who help protect the flag. By society meetings, by direct interview, and in other ways you can induce others to answer the call which you have heeded. You should at once exert every possible effort to this end.

Under the recent legislation mentioned, all citizens over twenty and less than thirty-one years of age may be drafted for service. These age limits include those of the average recent medical graduate, the hospital interne, and the physician not yet well established in practice. The medical profession is not in any way exempt from the general provisions of the draft. If a sufficient number of the above class fails to volunteer, the remainder will be taken.

The combination of opportunity to young men to serve their country, acquire the broadest kind of professional experience, and receive good pay ought to appeal to the red-blooded and ambitious. As to the other type, it might consider it an advantage to be a "went" now than a "sent" later.

For the older medical men, places can be found commensurate with their professional standing, years and experience. They, too, are needed—and needed in great numbers. The need and obligation should be brought home to them as individuals.

If each medical officer now enrolled would bring in even a single recruit to the Army Medical Corps, it would go a long way to meeting the necessity of the care of the sick and wounded. The nation desires and expects your help in this most vital humanitarian matter.

The emergency is urgent—the need great!

MENTAL RESERVATION.

It could hardly be expected that physicians, called from their peaceful pursuits to the new and unfamiliar duties of medical officers, would at once grasp the full significance of the elementary lesson of the soldier—unquestioning obedience. Examiners are constantly questioned as to the period, place and nature of the service to which applicants may be ordered. Usually the candidate has his own views as to where and when he would prefer to serve and the duty which he can best perform. Even when he accepts his commission (which he almost invariably thinks should be in a higher rank) it is too often with an expressed, or implied, mental reservation, that does not promise well for his future usefulness.

The time for hesitation has passed. We are all in the same business, and it is a serious one. Lieutenants, captains, or majors—we all have our spurs yet to win, and the vital question is, **not** what rank the individual holds, but whether he will be able to **fill** it. If any raw major flatters himself that his new distinction carries with it corresponding experience, he will soon be undeceived when he reaches the training camp, or is later placed in a position of responsibility.

We have always opposed promotion in the Medical Reserve Corps, except as the reward for actual service, but since we have won the reward first, it is up to us to **deserve** it. A great opportunity has been offered to the Corps to test its true value, and we can give nothing less than absolute and whole-hearted devotion to the Medical Department, to which we have pledged our loyalty.

PROMOTION OF RESERVISTS CALLED TO ACTIVE DUTY.

Doubtless many of the officers of the Medical Reserve Corps on active duty at the time war was declared have been surprised and disappointed at not seeing their names in-

cluded in the lists of reserve medical officers given higher rank.

This omission is not due to failure to recognize their qualifications for such rank, but to rulings which prevent it until ninety days have elapsed since war was declared. It was found that they could not be so promoted without relieving them from active duty, which was undesirable from the standpoint of every interest concerned.

The "Military Surgeon" desires to assure these officers that the authorities have every intention to recognize their faithful service and military experience. They fully appreciate it, moreover, that it is to the interest of the government to place them in positions of higher executive duty. As soon as opportunity permits, the action will be taken which all desire, and recognize as not only just to the individual, but for the interests of the service.

NON-COMBATANTS.

The "Military Surgeon" is informed by unimpeachable authority that in the forces of one of our allies abroad, the percentage of battle losses in the medical corps for the war, up to the present time, in killed and wounded, is greater than that for any other branch of the service, not excepting the infantry.

In a certain battle, on a 5-mile front and during two consecutive days, no less than 257 medical officers were killed and wounded.

And yet in the public mind the personnel of the medical service is pictured as "non-combatants" who are, by duty, distance, environment and the Geneva Convention, spared the dangers and vicissitudes of war.

"In the House of Lords recently," says The Lancet, "when the military service (review of exceptions) bill was read a third time and passed, Lord Derby said it was impossible to set up medical appeal boards all over the country, as was asked for in the House of Commons, because there were not sufficient doctors to do the work. Some peo-

ple, he said, thought that the work of the Royal Army Medical Corps was free from danger, but, as a matter of fact, the army lost more than 400 doctors, killed and wounded, in the Somme battle alone. At the present moment, he added, the army was not critically, but certainly lamentably, short of doctors."

"MILITARY SURGEON."

THE MEDICAL CORPS.

Their country's need is more to them than personal demands;

There is no law to send these men to serve in war-torn lands;

They freely go, they gladly go, with healing in their hands.

What is the sacrifice they make? A life's achievements lost;

The barriers that blocked success by weary stages crossed,

They cast the hard-won prize aside, nor stop to count the cost.

I think the surgeons, more than most, are truly great of soul;

Their charities, if told, would fill a lengthy scroll—

Their daily, countless kindnesses make more than bodies whole.

God speed the ships that bear the food we hasten over-seas;

God bless the men who fight to save our threatened liberties—

God knows the surgeons who enlist are not the least of these!

—Beatrice Barry, in N. Y. Times.

DO YOU KNOW THAT

The physical vigor of its citizens is the nation's greatest asset?

Half the blindness in the world could have been prevented by prompt and proper care?

That there may be an increase in pellagra during the coming year on account of the rise in the cost of foodstuffs is the fear expressed in a statement issued by the United States Public Health Service today. As a result of government researches it was found that pellagra is produced by an insufficient, poorly balanced diet and that it can both be prevented and cured by the use of food containing elements in the proportion required by the body. The application of this knowledge greatly reduced pellagra in 1916 as compared with previous years. This reduction is believed by experts of the Public Health Service to have been due to improved economic conditions which enabled wage-earners to provide themselves with a better and more varied diet and to a wider dissemination of the knowledge of how the disease may be prevented. It is feared, however, that pellagra may increase in 1917 by reason of an increase in food cost out of proportion to the prosperity now enjoyed by this country. The great rise in the cost of forage, particularly cotton seed meal and hulls, is causing the people in many localities to sell their cows and thus there is danger that they will deprive themselves of milk, one of the most valuable pellagra preventing foods. The high cost of living has further served to bring about a reduction in many families in the amount of meat, eggs, beans and peas consumed, all of which are pellagra prophylactics. In effecting economies of this nature the general public should bear in mind the importance of a properly balanced diet and refrain from excluding, if possible, such valuable disease preventing foods. It is believed that unless this is done there will be a greater incidence of pellagra next spring.

DO YOU KNOW THAT

Infected towels spread eye diseases?

An advertisement in The Journal of the Medical Association of Georgia will bring results. Rates sent on request.

EXAMINATIONS OF APPLICANTS FOR COMMISSIONS IN MEDICAL OFFICERS RESERVE CORPS.

Acting upon the request of the Georgia State Committee of National Defense, Medical Section, the War Department has appointed a Board of Examiners consisting of *Major T. E. Oertel, Captain H. M. Hall and Lieutenant H. J. Baker*, to visit various points in the State for the purpose of securing and examining applicants for Commissions in Medical Officers Reserve Corps.

The Board will visit the following cities on the dates designated and it is expected that the county committees in all nearby counties will notify all physicians in their territory of the date of examination, at nearest point, and arrange for the publication of this information in their county newspapers, in the earliest possible issues. The County Chairmen at points to be visited will arrange for a place of examination at the office of some centrally located physician, who is willing to assist the Board in weighing and measuring applicants, and in the performance of such other duties as may be requested of him. The exact location of such office should be made known to the medical profession in all adjacent territory in advance of date of examinations. The State Committee bespeaks for the Board of Examiners the earnest cooperation of all County Committees.

Augusta	June 18
Millen	June 19
Savannah	June 20-21-22
Brunswick	June 23 25
Waycross	June 26
Valdosta	June 27-28
Thomasville	June 29-30
Moultrie	July 2-3
Albany	July 5-6
Americus	July 7
Columbus	July 9-10
LaGrange	July 11
Macon	July 12-13-14
Milledgeville	July 16
Union Point	July 17
Augusta	July 18

A clergyman living near Leyden was the father of thirteen children. The eldest, born December 31, 1668, was Herman Boerhaave, accounted by many the most famous physician not only of the 18th, but probably of any century. He died of gout in 1738.

He was an indefatigable teacher, sometimes lecturing five hours a day to his students at Leyden. He was the first to give separate lectures on ophthalmology (the science of diseases of the eye) and to use a magnifying glass in the examination of the eye. He combined with a desire to study disease at the bedside, a freedom from theoretical and philosophical influence which led him to use the most modern diagnostic apparatus which he could secure. He was so famous that a Chinese official once sent him a letter addressed simply "To the most famous physician in Europe." His maxim was "Simplicity is the seal of truth."

The modern diagnosis of disease aims to employ every method which will reveal the exact mental and physical condition of the patient. Psycho-analysis will reveal the depths of the patient's mind almost as clearly as the X-ray shows the broken bone hidden beneath the body tissues. The pressure of the blood against the vessel walls may be accurately measured and appropriate means taken to ward off an apoplectic attack. The bodily excretions may be analyzed and the efficiency of the excretory organs determined. Special apparatus permits the examination of the eye, the ear, the nose, throat, bronchi, and the interior of various other parts of the body. Nothing is taken for granted; the blood is examined; the activity of the stomach is estimated; the validity of the nervous system is looked into. The modern physician finds the disease before he treats it.

Accurate diagnosis is of importance to the public health because an early and correct knowledge of the presence of a disease affords opportunity to prevent its spread. The case of tuberculosis which is found early has an infinitely greater chance of recovery than the one which is found late. Boerhaave recognized these facts in a general way and applied them, in fact, according to Rohlf's, he was the first who made a chemical examination of some of the bodily excretions.

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- To control the itching of skin infections.
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OF THE

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VOL. VII.

AUGUSTA, GA., JULY, 1917

No. 3

Gant on Diarrheas

MEDICAL
AND SURGICAL

This work is particularly full on the two practical phases of the subject—*diagnosis* and *treatment*. For instance: While the essential diagnostic points are given under each disease, a fuller description of diagnostic methods is given in a special chapter. The *differential diagnosis* of diarrheas of local and those of systematic disturbances is strongly brought out. There is a special chapter on *nervous diarrheas* and those originating from *gastrogenic* and *enterogenic dyspepsias*. You get the psychotherapy of psychic diarrheas. You get reliable methods of simultaneously controlling associated constipation and diarrhea. You get a complete *formulary*—prescriptions from Dr. Gant's own practice. There is a chapter on hookworms, tapeworms, and round worms, and on the diarrheas caused by them and other parasites. This chapter contains many *excellent illustrations*. The limitations of drugs are pointed out, the dangers of their use emphasized, and the indications for surgical intervention given. You get the *technic in detail* of all surgical procedures indicated—fully illustrated.

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Gant's Constipation and Intestinal Stasis

The *second edition* of this work has been increased by the addition of 25 pages of new matter. The work is medical, non-medical (mechanical) and surgical, the latter really being a complete work on rectocolonic surgery. The chapters on *therapeutic gymnastics* and *massage* are the outgrowth of Dr. Gant's personal experience. You get practical articles on *diverticulitis*, *peridiverticulitis*, *pericolicitis*, *perisigmoiditis* (*Jackson's membrane*), *Lane's kink* and affections of the *ileocecal valve*.

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THE CLASSIFICATION OF MENTAL DISORDERS ADOPTED BY THE GEORGIA STATE SANITARIUM.*

E. M. Green, M.D., Milledgeville, Ga.

It has been suggested to me by a former officer of this Association that its members might be interested in a statement regarding the classification of insanity which has been adopted by our State Hospital for the Insane, together with a brief explanation of each diagnostic group.

Scarcely a twelve-month elapses without a new classification of mental disorders being proposed; while modifications of the ones already in use are being made continually to correspond with the changing views of those who employ them. This state of affairs is the natural result of a progressively better understanding of such diseases and the intensive study which is now being given to them, and while classification is not the chief object to be attained it must receive atten-

tion in order that cases may become indexed for practical purposes.

With the study which Psychiatry now receives it is inevitable that our ideas of the clinical groups should be subject to change, as a more intimate knowledge of them is gained, so this classification is only offered as the one most satisfactory at the present time, a familiarity with which may aid physicians who come in contact with cases of insanity to group them in accordance with the standards followed by the institution in which the insane of the state are cared for.

The classification employed is subject to four general divisions under which the various psychoses may be found, as shown by the accompanying tabulation:

I. Psychoses Attributable to Organic Changes in the Nervous System.

Psychoses accompanying brain tumor.
Traumatic psychoses.
Dementia paralytica.
Senile psychoses.
Psychoses with nervous or brain diseases.

II. Psychoses Due to the Action of Toxic Agents.

Alcoholic psychoses.
Drug and other toxic psychoses.

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

Authors desiring reprints must notify Phoenix Printing Company, Augusta, Ga., within 15 days after publication. Prices of reprints published in this issue.

Infective-exhaustive and auto-toxic psychoses.

Psychoses accompanying pellagra.

III. Psychoses Without Demonstrable Pathological Changes in the Brain.

Undifferentiated depressions.

Involutional melancholia.

Paranoic condition.

Manic-depressive psychosis.

Dementia praecox.

Psychoneuroses.

Epileptic psychoses.

IV. Congenital Defective States.

Other constitutional disorders and inferiorities.

Imbecility.

Idiocy.

Individual mention of these groups is necessary in order to explain the reasons for their acceptance.

Psychoses Accompanying Brain Tumor.

Cases of brain tumor bear such a characteristic group of symptoms, and their pathology is so easily demonstrable that it has been thought better to allow them a separate position than to include them in the large and less well defined group of "psychoses accompanying nervous or brain disease," although they could with perfect justification find place there.

Traumatic Psychoses.

Among the mental disorders which arise as the result of trauma are recognized three classes: those characterized by delirium as the immediate result of injury and which are recovered from or end fatally within a comparatively short time, as a rule; those which present more or less permanent mental changes, such as emotional irritability, increased susceptibility to alcohol, hysterical or neurasthenical symptoms; those exhibiting aphasic symptoms, convulsive attacks, and mental weakness. The first of these classes is termed "post-traumatic delirium," the second, "post-traumatic constitution," the third, "traumatic defect condition."

Dementia Paralytica.

A few of the synonyms for the above heading are mentioned because quite a good deal of confusion has arisen from their application by various physicians to several very different pathological conditions. The more common of these synonyms are the following: General paralysis of the insane, gen-

eral paralysis, paresis, paralytic dementia-parietic dementia.

This disease invariably depends upon a previous syphilitic infection and usually appears within from five to twenty-five years after the original infection. It is much more commonly met with in males, as that sex is more often exposed to syphilis, and in an urban population it forms one of the largest of the classification groups.

Among the white race in this state, paresis is found in the proportion of ten males to one female, as shown by the records of the Sanitarium. Among the negroes of both sexes the disease is more often found than in whites, the ratio of males to females being as 5 to 1.

Other causes may contribute to the outbreak of the disease, alcoholic excess, trauma, etc., but it can be definitely said that there can be no paresis without syphilis. The most productive period of life is the one in which the disease appears in the great majority of instances, although juvenile cases are found in congenital syphilitics and occasionally a case appears in the later years of life.

Senile Psychoses.

The withdrawal of interest from the present and the disposition to dwell in the past, with a tendency to forget names and dates is characteristic of all old people, but when these tendencies reach a pathological degree with accompanying failure of memory for recent events and its preservation for remote events, with other mental and physical evidences of deterioration, a true senile psychosis is present. These changes are apt to occur in women after the age of 65 and in men at a somewhat later period although they may exceptionally be met with at an earlier age. Arteriosclerosis may or may not be present, but in some degree it is a usual accompaniment of the psychosis. The forms in which senile insanity appears may be quite varied and be manifested by a simple dementia, a confused delirious state, a depressed and agitated state, a paranoid state or by other forms.

Psychoses With Other Brain or Nervous Disease.

Mental disturbances may accompany a variety of nervous diseases, and it is such cases which are included under the above heading. Among them are found the conditions which are vaguely termed "organic brain diseases," in each of which the nervous affec-

tion should be accurately defined if possible. The mental symptoms show a wide variation according to the disease upon which they depend.

The following nervous and brain diseases are frequently accompanied by mental disorders:

Cerebral hemorrhage, thrombosis or embolism,

Cerebral syphilis,

Cerebral necroses,

Cerebral arteriosclerosis,

Tabes dorsalis,

Meningitis.

Huntington's chorea,

Sydenham's chorea,

Multiple sclerosis,

Other cerebral affections.

Alcoholic Psychoses.

The prolonged use of alcohol may be followed by the appearance of a quite characteristic mental disorder but this should be clearly differentiated from a mere chronic alcoholism without a psychosis. The former only are included under the above heading.

This form of disorder is not very common in Georgia, and since the prohibition laws have been better enforced, has become something of a rarity. Males predominate largely in the number of those affected by the psychosis and the white race furnishes the greater percentage of cases. Among the more frequent forms in which it may be manifested are the following:

Delirium tremens,

Acute hallucinosis,

Chronic hallucinosis,

Deterioration,

Korsakow's psychosis,

Paranoid States.

Drug and Other Toxic Psychoses.

Upon a basis of chronic addiction to opium, its derivatives, cocaine, and a few other drugs, there develop psychoses which may take on quite different characteristics, while the temporary employment of certain others may, in some individuals be accompanied by a delirium of short duration.

The most common form in which these psychoses are manifested is probably an acute or a chronic hallucinosis, although paranoid states are often encountered and, after years of chronic morphinism a dementia may supervene.

Infective-exhaustive and Auto-toxic Psychoses.

Any infective or exhaustive process may be accompanied by a psychosis which manifests itself in delirious and confused states, with a multiplicity of hallucinations and a usual apprehensive emotional tone. The commonest example of such a condition is the delirium of typhoid fever.

Disturbances in function of some of the ductless glands, notably the thyroid, give rise to mental disorder, while simple intestinal toxemia may produce mental symptoms or influence those already existing.

Infectious processes may present the following forms: Initial delirium, which appears in advance of the fever; a febrile delirium; a post-febrile enfeeblement.

Exhaustive processes give rise to collapse delirium, an amentia, or a chronic nervous exhaustion (acquired neurasthenia).

Psychoses Accompanying Pellagra.

Preceding the appearance of pellagra, at any time during its course, or during the period of convalescence, mental disturbances may be encountered. These disturbances may consist of depressions, excitements, delirious and confused states or other evidences of mental disorder. The delirious and confused states are the ones most frequently met with, and so closely do they simulate the infective-exhaustive psychoses that the latter term has been employed in designating this type of reaction.

Pellagra, in many instances, appears during the course of a psychosis and in such cases the diagnostic grouping is that of the original disorder. Only those psychoses which appear to have been caused by pellagra are included in the group under consideration.

Undifferentiated Depression.

Not infrequently are encountered cases of depression which present no accompanying symptoms of a character decided enough to warrant their assignment to one of the other more clearly defined groups in which depression appears as a prominent symptom. Later in the course of such cases additional features may be developed and lead to a more satisfactory grouping.

Involutorial Melancholia.

The term "melancholia" has been reserved for cases of depression which appear during the involutorial period of life and are char-

acterized by a prolonged and gradually advancing depression, with insomnia, anxiety, feelings of self-reproach, and fears of punishment for sin. Their number is never large and has tended to grow smaller in recent years since associated symptoms suggestive of other groups have been recognized in a great proportion of the cases formerly so diagnosed.

Manic-Depressive Psychosis.

In point of numbers, this is the largest one of our classification groups and includes those cases formerly designated by the terms acute, chronic, and recurrent mania and melancholia, circular insanity, alternating insanity, and periodic insanity.

This form of disorder is a benign psychosis, that is, one which does not terminate in dementia, and it is characterized by a tendency to recur throughout the life of the individual. Manic-depressive insanity attacks females more often than males, and its first appearance is usually in early adult life. Recovery from the attack is the rule, although in a small proportion of the cases no intermissions occur.

Three chief forms of the disease are recognized; the manic form, which is characterized by emotional elation, restlessness, and flight of ideas; the depressed form in which the most striking symptoms are depression, slowness of movement and retardation of thought; the mixed form, in which are combined symptoms of both of the foregoing forms and which is subject to a number of sub-groups.

Dementia Praecox.

On the basis of a peculiar type of constitutional make-up there develops a lazily outlined psychosis which is characterized by changes in the emotional sphere and in that of the will. Accompanying these changes are noted peculiarities of manner, fantastic delusions and hallucinations, odd behavior, and evidences of disintegration of the personality. To this psychosis the name of "Dementia Praecox" was given by Kraepelin. The studies of Meyer and Hoch have led to a conception of the disorder which is at present pretty generally accepted throughout the United States and which differs from that of Kraepelin in that it predicates a lack of adaptation and a faulty adjustment to the environment as the cause of the psychosis, while he suggested the probability of an organic brain disease due to the action of certain secretions.

This affection attacks predominantly those about the age of puberty or appears in the early years of adult life and tends to mental disorganization, although it is possible for the deterioration to halt before reaching a profound grade.

The psychosis is manifested in several clinical types, which, because of numerous transition forms, give rise to difficulties in delineating clearly.

These generally recognized types are grouped according to their chief symptoms into the

Simple deteriorating,
Hebephrenic,
Katatonic,
Paranoid.

Paranoic Condition.

Paranoid states are frequent accompaniments of many psychoses and should not be confused with the cases included under the above heading, as here are grouped the independent paranoic states which show no definite signs of deterioration. This form of mental disorder is characterized by the presence of delusions of a persecutory nature, which are systematized and the reaction to which is similar to that accompanying the ideas of normal persons; the preservation of the ability to reason logically; natural conduct, and no distortion of thought.

This psychosis may develop as the result of actual occurrences of an unpleasant character but the greater number of cases are determined by internal conflicts, associated with which are exaggerated emotional tones. The ideas of persecution and the false points of view may persist indefinitely without leading to mental weakness.

Psychoneuroses.

This group is composed of cases of hysteria, psychasthenia, neurasthenia, anxiety neurosis and other conditions of like character, but can not be extended to include the psychoses in which hysterical, psychasthenic or neurasthenic symptoms are incidental. Such symptoms are often seen in cases of manic-depressive insanity, dementia praecox, and occur as episodes in the lives of constitutional inferiors.

Epileptic Psychoses.

Epilepsy may exist without any recognizable mental disorder, although the disease tends to result in mental weakness of a more or less profound grade. Associated with and dependent upon it, however, psychoses may

be encountered and be manifested in deterioration, in excitements with or without hallucinations, in dazed states or in anxious delirium.

The form of the disease, whether grand or petit mal, is no criterion by which to judge of the mental disorder, for the latter may reach as extreme a grade following the lighter as the more severe attacks.

Constitutional Disorders and Inferiorities.

In this group are placed the large class of those who show an asymmetrical mental development. Some of them are superficially bright, but show perversions in their mental make-up, are ill-balanced, emotionally unstable and are easily influenced by suggestion; others present a more uniform and marked defect and their intellectual capacity is more restricted.

This group is further divided into the "psychopathic personalities" and the "constitutional inferiors." The former may appear to have a normal intellectual development; they may be quick at grasping a point, lively entertaining companions, but they show a lack of emotional balance, a weakened power of control, a feebleness of judgment, a disposition to act in accordance with every whim without consideration of consequences and often manifest defects of moral character and perversions of instinct. Among them are found the eccentric, the reformer, the founders of new religious sects, the constitutionally elated, depressed or nervous, the moral offenders and the sexual perverts. Excitements, depressions, paranoid trends or hallucinatory states may appear as episodes throughout the lives of these individuals.

The constitutional inferior presents a mild degree of intellectual defect with which may be associated the neurotic traits and moral defects enumerated above. The same episodic disturbances which occur in the psychopathic personalities may be found in these persons.

Imbecility.

A coarser grade of intellectual defect is met with in the imbecile and usually renders him dependent upon others. His resources are small and although he may perform simple duties under supervision, he is unable to compete with those of normal capacity. Throughout the life of an imbecile outbreaks of anger, excitement or violence are common, while crimes against property and sex-

ual offenses are not rare. The degrees of imbecility vary between wide limits and in individual cases the lines of demarcation can not be clearly established. True psychoses are frequently encountered in these subjects, but their symptoms are apt to be less clearly defined than in those possessing a higher mental endowment.

Idiocy.

To the lowest grade of intellectual defect the term "idiocy" is restricted. These persons are incapable of improvement by education and are dependent upon others for every need; many of them never learn to speak, are unable to make known their wants, and lead a merely vegetable existence. They may be subject to episodic attacks of irritability and excitement, but are incapable of carrying out the criminal acts which may mark the course of the imbecile's life.

In connection with the above statement in regard to the classification of mental diseases, I would like to mention the importance of accurate histories. To insure correct diagnosis and prognosis, it is necessary to know something of the family traits and to ascertain the patient's condition previous to the onset of the attack, the changes exhibited in his manner of thinking, feeling and acting, the probable causes of the outbreak, and the date upon which the first symptoms were manifested.

Many of the histories sent with patients are of absolutely no value; some are actually misleading, while others contain absurdly impossible statements. In some instances the blanks which are furnished the ordinaries appear to be filled out in a routine way, so that it is possible to say from what county the patient comes by merely reading the history of his case. It would appear from the answers to the question regarding the cause of the attack that "masturbation" in the male and "female disease" in the female are productive of 90 per cent of all cases of insanity, when in reality these two factors are of extremely small importance.

It is not unusual in the case of young children to meet with the statement that "marital relations are congenial," nor is it rare to find mistakes of 30 or 40 years in the assigned ages of the patients.

From one county in the state the manifestations of the disease are always given as "the usual symptoms of insanity," a statement than which none could be more absurd.

From another county the routine statement is made that the attack is of "one month's duration," the cause is "syphilis," and that the mental disorder is manifested by "delusions of persecutions."

Such misinformation as the above can be of no possible assistance to those who are interested in finding out the real condition of the patient in order that they may institute as promptly as possible whatever form of treatment is indicated and be prepared to furnish the patient's relatives with an accurate prognosis.

A physician referring a patient to a fellow practitioner, in order that he may secure some form of treatment which he is unprepared to administer, always sends with the patient as full and accurate a statement as it is possible for him to give. If physicians would follow this plan with their insane patients when transfer to the State Sanitarium is decided upon, much delay in instituting treatment would be avoided and more accurate diagnoses and prognoses would be made by the physicians of that institution.

Any physician who is interested in his cases of mental disorder and who wishes to follow the progress of his patients, will be promptly furnished with all the information at hand if he will simply make a request for it. By this means he will keep in touch with the patient and be prepared to continue whatever treatment is advisable when the latter returns to his home and in addition he will develop some interest in a branch of medicine which is neglected by the average physician.

DISCUSSION OF DR. GREEN'S PAPER.

Dr. H. D. Allen (Milledgeville): I do not know anything to say except that this is a most excellent paper and I agree with Dr. Green that it is a timely subject. It aids the alienist if the physician at home describes the condition of the patient, and saves a great deal of correspondence. However, as far as the alienist and expert is concerned, they have a hard time in a court of justice before a jury, because lunatics and crazy are more easily demonstrated and understood by the laity than these finer distinctions of this paper.

Dr. E. M. Bailey (Acworth): The subject which the Doctor has brought before us is of importance to everyone of us in a some-

what different way than his paper has emphasized. Any physician in active practice is sometimes confronted with cases of psychoses of some sort or other, and the important thing that comes to us all is that particular group of psychoses which affect the young men—approaching puberty, passing through it and from that on to adult life. One or two groups the Doctor has mentioned emphasize this line. It is a line which I think most of us do not discover because we do not know about it. A classification of the various psychoses or mental troubles, such as the Doctor has set forth, is of the utmost value if we will take the particular group which comes to us—they come complaining of headache and bad dreams of irritableness, and we say they are run down and give them a tonic. We are overlooking many times serious findings which are really psychoses, and for which we give them a tonic. I think it would be of the utmost value if the Doctor and his associates at Milledgeville, where there are so many clinical subjects which they receive by reason of neglected psychoses—if they would classify them, it would be of great use to all of us.

Dr. N. P. Walker (Milledgeville): In the course of study of any subject it is necessary, first, to collect and classify data and classify it accurately, before we can see the proper ground. That is just as pertinent to mental treatment as any other. Therefore, it would greatly help the institution if these physicians who make out histories were as accurate and thorough as possible in the case. The statement that a patient is violent does not carry any particular meaning except that he is dangerous. If something is given as to what preceded the attack, or what he says while it is active, it may mean a great deal. Therefore, the symptoms usually mentioned by physicians are superficial and do not mean anything. They do not mean the emotion behind the action, and that is what is necessary.

Dr. Y. H. Yarborough (Milledgeville): As to the classification Dr. Green has spoken of, I will not have anything to say, but I would like to mention one point, and that is a line which should appeal to this body throughout the state. In the histories to the institution they are frequently filled out by physicians or by members of the family, but mostly the record is made by the family physician, and we frequently get such things as this: "Patient seven years old; marital

relations congenial." Of course, such a statement as that is absurd. In the classification which Dr. Green has given you, he has pointed out the prominent symptoms and these symptoms give him the group to which the different psychoses belong. But what we have to arrive at is that statement furnished by the people. Of course, at the beginning it is hardest; after we get into the case we can go back on our own record. But I would like to emphasize this, that you render us at the institution as much assistance as you can by going into the case and giving us the real facts of the case. It might appear that a case of imbecility would be easily recognized, but I think one of the hardest things is to differentiate between imbecility and dementia-præcox. It is a point you might not recognize, and yet it is very essential that we get all these points—these points that the people speak of, as to his irritableness, that he sits off by himself, and has a peculiar movement, tapping with his hand, or something like that. These are all significant. Then is the time that your patient could be benefited by early commitment to an institution. Then they are accessible. After a while they are diverted entirely by their delusion and psycho-analysis then is absolutely impossible.

ENDOTHELIOMA OF THE KIDNEY. REPORT OF THREE CASES.*

By John Funke, M.D., Atlanta, Ga.

Tumors of the kidney or not so very common as shown by Williams who found the kidney the origin of malignant growths 25 times of 8,371 malignant neoplasms compiled.

Case 1. White male, age 43 years. His manifestations began two years before the fatal issue when he began to experience discomfort in the region of the kidney to which he at first paid no attention. The continuation of the discomfort led him to regard the matter with some seriousness and then sought medical aid.

The patient underwent repeated examination, but no definite conclusion could be reached as to the nature of the trouble. About one and one-half years before his

death there was discovered in his urine a few red blood cells, and about one month later the left kidney appeared to be slightly enlarged. Succeeding examination revealed an increase in the size of the left kidney and constant presence of blood in the urine. About one month before death, the urine contained spherical cells, ranging from 20 to 30 micra in diameter, the protoplasm of which contained highly refractile bodies not unlike fat globules. The nucleus could not be seen.

The patient, after growing worse and losing weight, died.

The autopsy showed the following:

The Heart: The musculature is fairly firm and measures on the left side at the thickest point 2 cm. Among the columnar carnae, especially on the interventricular aspect, is a tissue, greyish-pink, with red mottling, which is less firm and less glistening than the myocardium, but is more firm than a white thrombus. This tissue is adherent to the myocardium, but whether it is closely incorporated is difficult to determine. The mitral and tricuspid leaflets are pliable and not thickened, but the aortic valves are thickened and rigid and at some points calcified.

The aorta is sclerotic. The lumen of the coronary artery is narrowed; the intima is yellow, irregular and at many points hard.

The peribronchial and prevertebral lymph nodes are greatly increased in size; some measure 5x3x2 cm. They are soft, adherent to one another, but separation is possible. They are easily cut, and the incised surfaces at some points present fairly well circumscribed, comparatively dry, yellow, rather soft patches not at all unlike areas of caseous necrosis. The remainder of the incised surface is glistening moist and greyish-pink.

The mass occupying the position of the left kidney measures 13 by 42 by 12 cm, and weighs 900 gms. It is fairly uniform, ovoid, adherent to the spleen to the tail of the pancreas, to the transverse and descending colon and to the perirenal structures. The mass fluctuates and upon section 680 cc. of reddish-brown blood-like fluid escaped, which upon microscopic examination, was found to contain many red blood cells which showed a tendency to agglutinate and large cells ranging from 20 to 30 micra in diameter, which contained large and small refractile bodies not unlike fat globules. The proto-

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plasm is granular and the nucleus can not be seen. Here and there are masses of cells, some of which are fusiform; others pyriform, and others flagellated. The capsule of the mass varies from 1 mm. to 1.2 cm. in thickness. The inner aspect of the large cyst-like structure in the upper half is comparatively smooth, glistening and greyish white in color. There are, however, many pockets in the wall of the cyst, the lining of which is very irregular and presents the picture of a progressively destructive lesion. At the lower portion of the cyst corresponding to the lower pole of the kidney there is a nodule measuring 10 by 8 cm. The exposed portion of the nodule is greyish-yellow, soft, blurred and looks not unlike caseous material. The underlying tissue is very soft, greyish-pink, with reddish mottling and very vascular. Cells scraped from this nodule are identical with the cells found in the fluid of the cyst.

At no point can kidney substance be detected microscopically.

The ureter is greatly dilated; its wall is thick and it opens into the large cyst already mentioned.

The right kidney measures 10x5x4 cm., and weighs 100 gms. It is adherent to the adjacent perirenal structures and the capsule is adherent to the underlying kidney substance. The stripped surface is rough, granular and bright red; the cortex is narrowed and irregular. The lower half of the organ contains a circumscribed, well-defined nodular mass measuring 2.5 cm. It is fairly firm, granular and greyish-white with reddish mottling.

Histology: Sections from the left kidney largely composed of cellular elements arranged in strings and plugs. The cells are large ovoidal; they have large ovoidal nuclei, which are poor in chromatin. The protoplasm is abundant, granular and acid staining. The center of some of the plugs are occupied by a granular, acid-staining substance containing fragments of nuclei. The center of other plugs are unoccupied. Between the strings and plugs are fibrous tissue bands containing few blood vessels and many small round deeply staining cells. Some of the blood vessels are in close relationship to the tumor cells. In some of the sections one margin is composed of an acid-staining granular substance in which one can recognize the outlines of cells bearing a resemblance to those constituting the strings and

plugs. This margin is clearly composed of necrotic tissue.

Sections from the lymph nodes show a picture like that of the right kidney.

Heart: Lying on the endocardium is an acid substance composed of parallel running strands and a granular material in which there are many leucocytes, both polymorphonuclear and mononuclear. Similar leucocytes have infiltrated between the muscle fibers, many of which structures are swollen and granular.

Diagnosis: Endothelioma of the left kidney with metastasis to the opposite kidney and peribronchial lymph nodes. Acute mural endocarditis and diffuse suppurating myocarditis.

Case 2. Color, female child age 2. There was no history of a pre-existing disease which was in any way related to the present condition. About six months before the child was taken to a physician the parents noticed that something inconvenienced the child, and that the disease seemed to be on the left side. In a very short time the patient complained of great discomfort, and about two weeks before the physician saw the child there occurred a bulging in the region of the left kidney.

Examination revealed a rather large mass in the position normally occupied by the left kidney. The mass was slightly movable and very firm. Urine showed nothing abnormal.

Diagnosis of sarcoma was made.

The mass was removed at operation and was found to be a part of the kidney.

Pathological Report: Specimen consists of a reniform mass measuring 15 by 6 by 6 cm.; weight, 340 gms. The mass is encapsulated; the capsule is composed of a rather dense structure 6 mm. thick. The specimen is fairly firm and resists the knife slightly. The cut surfaces present a somewhat lobulated appearance, are granular and pinkish red in color. At some points along the periphery of the mass are several strips of reddish brown, granular, feebly glistening tissue not more than 0.5 cm. in width, which resemble kidney tissue. The general appearance would lead one to believe that these strips were being encroached upon before removal of the specimen.

Histology: The sections are composed of long strings and plugs. The cells constituting these structures are comparatively large, stain fairly well and are not easily to be outlined. The protoplasm is granular; the

nuclei are comparatively small and stain with a greater degree of intensity than the protoplasm. The stroma is scanty and surrounds the strings and plugs of cells; it contains a few small round deeply staining cells and a few blood vessels.

Sections made from the narrow strips were found to be atrophic kidney substance.

Diagnosis endothelioma of kidney.

Case 3. Adult, white male, age 54 years. His trouble began about one and one-half years before death, and consisted of discomfort in the region of the left kidney. For more than six months before the operation the urine contained blood which was never large in quantity. Enlargement of the kidney could not be determined.

The left kidney was removed. The patient never reacted fully from the operation and died four days later.

Pathological Report: Specimen is reniform in shape and clearly a kidney measuring 10 by 6 by 5 cm.; weight 140 gms. The capsule is not present. The stripped surface is smooth and the general color is pinkish grey with reddish mottling. The specimen presents a slightly lobulated appearance. There is no noteworthy evidence of disease as viewed from the external aspect. The organ cuts easily and sectioning reveals an abnormal mass extending into the lower half of the pelvis. The growth involves principally the medulla, only a small portion of the cortex being involved. The mass is irregular, rather firm and greyish white in color, and measures 2 by 1 cm.

The histology of this growth is like that of the other two growths reported here.

In the last two cases there was no autopsy obtained, consequently we do not know whether or not there was metastasis.

The first cases clearly died as a result of a septic infection arising in the pelvis of the left kidney.

Symptoms: Hematuria, pain and tumefaction in the region of the kidney. The combination of manifestations is very suggestive of a neoplasm, and apparently makes the diagnosis very easy, yet often the condition is not correctly interpreted as shown by the findings at autopsy. One can understand such errors very easily when one considers that there may be present this combination of manifestations in other diseases of the kidney. In some forms of tuberculosis of the kidney, the organ may be greatly enlarged and not infrequently it is bossed so

that by palpation, these areas may be mistaken for tumor nodules. Pain and hematuria may be present. If the tubercle bacillus can be demonstrated in the urine, the question will be settled.

In polycystic disease of the kidney, there may be hematuria and pain; enlargement is as a rule present. With such a condition, the differentiation from neoplasm may be very great.

There are quite a number of other conditions accompanied by the manifestations I have named which might be confused with the neoplasms of the kidney.

Pain may be colicky, simulating renal calculus. The colic is usually due to the passage of clots or fragments of necrotic tissue. This symptom may refer to other organs than the kidney.

Detection of tumor is often not possible, for the kidney may not be increased in size; as an illustration, the third case of this paper may be cited, in which no evidence of a growth could be detected until the kidney was split open.

The finding of a certain cell in the urine makes the diagnosis of tumor of the kidney a little lighter. The association of this cell and a neoplasm was made about ten years ago, when I was called upon to examine the fluid withdrawn from the pleural sac. In reporting the results of that examination, I mentioned in addition to the large number of erythrocytes these large coarsely, granular cells, with highly refractile, granular bodies obscuring the nucleus.

In that report I suggested the possibility that those cells might signify the presence of a malignant growth. This patient ran a course like that of a malignant growth and finally died, but no autopsy was obtained. In the sediment of the contents of the pelvis of the kidney of the first case here recorded, I found a similar cell. Some time ago, I had occasion to examine the fluid obtained from the abdominal cavity, in which I found the large cell with refractile granules. The trend of opinion here was toward tuberculous peritonitis. The presence of these cells made me lean toward a tumor and consequently in exploratory operation, at which an ovarian cyst was found. So that even the cell to which I have referred, is not indicative of tumor, yet it may serve as a link in the chain.

I have named these growths "endothelionia," but I have no way of proving to the

satisfaction of myself that these neoplasms have really developed from endothelial cells. Ribbert has stated one can only insist that a growth arises from a certain cell where such can be seen, which is an impossibility.

Vincent makes the statement that it is harder to get a satisfactory classification of neoplasms of the kidney than in other structures.

I feel there is enough confusion in the classification of neoplasm to produce delirium in almost any sane man, and I believe the confusion is daily increased.

About ten years ago, it was pretty well settled to the satisfaction of nearly all authorities except Sudeck that the most common form of growth in the kidney was hypernephroma, and as its name implies arose from the hypernephron or adrenal rests, until Stoerek took issue with the prevailing opinion, and one of his reasons for taking this stand was that hypernephroma was more common in the lower than in the upper pole of the kidney, whereas adrenal rests are found in the upper pole. Stoerek suggests that these tumors develop from regenerating tubules in an atrophic kidney. I take it that Stoerek means that this atrophic change in the kidney is local, for these growths may develop in organs which microscopically present no evidences of atrophy.

Wilson takes issue with Stoerek on the exact origin of the growth and states that these growths develop from redundant tissue, which has never become connected with the renal pelvis. That hypothesis is probably as hard to prove as is the theory of Growitz.

DISCUSSION OF DR. FUNKE'S PAPER.

Dr. Everard Wilcox (Augusta): If a renal tumor is situated away from the pelvis, especially these slight tumors which are so often encapsulated, there may be no hematuria. It frequently happens that the entire kidney is destroyed by a tumor without there being a palpable tumor. These two facts may be kept in mind in face of the malignancy which these cases so often present. I have never seen an endothelioma of the kidney. These three cases constitute an important contribution to the literature. We are just a little uncertain as to what an endothelioma really is, since the histologists are not clear on the histogenesis of endothelial cells. So-called endothelioma frequently prove to

be endoneoplasms. Rivett says in order to be sure it is an endothelioma we must see the tumor in its inception—a thing which is impossible. Certain sarcomas and epithelial tumors frequently produce cells similar to endothelioma by the merging of the tumor cells at the margin of the growth with what is clearly vascular endothelioma; it is not proof of the endotheliomic character of the tumor. Carcinoma by changes along the lymph channels sometimes stimulates marked endotheliomic proliferation which is inflammatory in nature, but these newly-made endothelioma are not actively participating in producing neoplasms. I once sent a specimen of endothelioma to Dr. Walters, of the Boston City Hospital. He thanked me and said it looked like an endothelioma, but he did not know how to prove it.

The kidney presents great complexity in tumor formation that is not found in any other organ. Our present knowledge of tumors does not permit of scientific classification because we do not know the cause, and any classification of tumors on a basis other than etiology is unsatisfactory, so we have to group them for the purpose of study according to the morphology of the cells.

Tumors of the kidney, or the familiar hypernephroma appearing from childhood to old age show a most varied microscopic picture. At times these cells seem to have vascular origin and suggest endothelioma; again they grow like epithelioma and resemble carcinoma; then they look like sarcoma; they form tubules, at times, and papillomatous processes are not uncommon; cordons of cells may appear.

Dr. Funke's paper is a very valuable contribution. He is certainly mindful of the possibilities in diagnosis, and with his careful study I am sure he has avoided these errors and has made a valuable contribution.

Dr. John Funke (closing): I started out by saying that I was not keen about the name; that I called them endothelioma merely to get away from the term "hypernephroma." I think that term is overdone. It means any growth that has arisen from cells which are of adrenal origin. I do not know who is going to prove that they are present, and if so that the tumor arose from these cells. I think it is impossible to demonstrate that. These growths are a source of great annoyance to the pathologist, and as far as the clinician is concerned are superfluous because you can not any more diagnose en-

dothelioma of the kidney clinically than an epithelioma; it is an impossibility. One is satisfied to diagnose a tumor. That showed in the two cases which were not diagnosed correctly. Therefore, if I were going to make a classification for a clinician I would classify them into benign neoplasms and malignant neoplasms. Even that may be superfluous, because sometimes it is impossible to diagnose the difference between benign and malignant growth. But yet when you come to the last stages of the disease there is probably manifestation in other organs that clearly indicate that it is not benign, it is malignant; so it is well to classify benign and malignant. That is a very simple classification and is not based upon anything except what you can see. From a pathologist's point of view it is superficial. No pathologist would care to stop at that. But pathologists are in about as great dilemma in regard to the classification of tumors of the kidney as the men who study mental diseases are as to the classification of mental diseases, because of the great variation of structure of this particular organ. Stoerek was the first to take issue with Growitz on hypernephroma. He took the ground that these growths developed from tubules. Then Wilson took the ground that these developed from lung tissue and that they were nephroma embryoma, as he called it. These things are practically impossible to prove, because when you can see the tumor of the kidney it is so far advanced that you can not see its origin.

I have given it the name endothelioma simply because the picture presented resembles more the endothelioma with which I am familiar. Another reason was to get away from hypernephroma. That may be a carcinoma, but in a child two years old we do not expect to find carcinoma, but rather expect to find a growth of connective tissue. Carcinoma is not impossible in a child of that age, but it is not so common.

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A TREATMENT OF THE NAUSEA OF PREGNANCY.*

By Stephen T. Barnett, M.D., Atlanta, Ga.

It is not the purpose of this paper of going into the various methods of treatment which are in vogue or have been in the past followed. I desire to set forth a line of treatment which, taken on the whole, has been eminently successful with me for the past thirteen months. I hope it will be tried out, its deficiencies noted, and I trust, its good points improved upon. Should it help ameliorate this at times distressing condition I shall be many times repaid for whatever I may have done in securing this happy end.

It probably would not be amiss to briefly outline a theory of its causation. I had been working along these lines for about six or seven weeks when a preliminary report of five cases came out by Dr. J. C. Hirst in the February 26, 1916, issue of the Journal of the A. M. A. This was followed December 16, 1916, by a fuller review of his experience along the same line. In this last article Dr. Hirst briefly outlines a theory of its causation to which I substantially subscribe, except I go somewhat further. He believes there is an internal ovarian secretion that does take place. That this is accomplished normally by the gradual absorption of lutein from the so-called false corpus luteum. That, with the advent of pregnancy, by the end of the first month all of the lutein has been absorbed and as no other Graafian follicles having matured, nausea usually supervenes. During this period, however, the true corpus luteum is still continuing to grow, but absorption of this, as has been proven for some time, does not begin to take place until about the end of the third or the beginning of the fourth month. This covers the usual time of the nausea of pregnancy. That there are some apparent discrepancies in this I admit. It is not within the scope of this paper to discuss these now. In addition to the above I believe all these cases are associated with a more or less marked acidosis. That acetone in quantity is practically invariably found in the urine I know. Hence I believe that they should be treated

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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along the lines of deficiency of lutein and the control of the acidosis.

For a number of years there have been on the market a dried extract of the ovary. More recently answering the demand of those who believe in the internal ovarian secretion theory, there appeared extracts of corpus luteum. In the fall of 1915 a sterile solution in ampoules containing 1 cc. and representing 0.20 grm. of the extract and chloretone, 0.005, was sent out for experimental purposes. It was gotten up with the idea of controlling, if possible, the phenomena of menopause. No mention was made of its use in the nausea of pregnancy. I used it in a few cases of menopause, but not systematically. About the first of January, 1916, a primipara of about four weeks came under my care for nausea. I tried all of the usually accepted medications with no avail. Among these I tried some of the dried extracts of corpus luteum. This, like the others, were promptly vomited. It was then that I thought of the ampoule form. But I could find no literature as to dosage. So I evolved one by giving it at first every other day and then once and eventually twice a day. I now give it frequently three times a day in the worst cases.

In the selection of the cases I have made none, taking them as they came. Many, of course, require no medicament. But when the simple measures do not help or the dried form of the extract in combination with bicarbonate of soda is either of no value or is not retained, I have resorted to the injection of the sterile solution combined with other measures looking toward the acidosis.

The dosage, as I have indicated, is variable. If light, a few doses will suffice. If pernicious, many will be required. The smallest number in which I accomplished complete relief was three. The largest about fifty. The mild case had no other treatment. The severe ones have all had treatment looking toward the acidosis. The mild cases at home or at my office. The severe ones have been mainly in the hospital. If the ampoules are used I usually start off at home with a daily injection of one ampoule. If this does not seem to control or if the patient gets distinctly worse, I send her to the hospital and give them twice or three times a day. In three or four days I have usually the cases under control. The dosage can then be lessened to once a day or every other day or even once a week. In one case I had to

give it to her about twice at the time of her usual menstruation up to the end of pregnancy. She would then be comfortable up to the next time. Usually by the end of the third month she is, as far as nausea distress is concerned, comfortable.

In the severe forms I have always combined the drug with a diet looking to the control of the acidosis and have given bicarbonate of soda in 5 grm. to the goblet of water and this ad lib. At the same time I have given per rectum by Murphey drip XL gtts to the minute from 500 cc. to 1,000 cc. of Locke's Solution B. i. d. This is kept up until control is secured. When she commences to retain the soda solution, food is started of a non-nitrogenous character. As rapidly as possible she is put on cereals, milk and baked Irish potatoes. If practically relieved, the dosage is entirely stopped both under the skin, by mouth and rectum. This, of course, is done gradually. If she still shows no symptoms and the urinalysis does not contra indicate she is gradually put back on a normal food.

The results so far obtained in sixteen cases have been uniformly successful. As would be expected some have been more marked than others. I believe all of these cases will be greatly relieved by this treatment, except possibly those due to some reflex cause as failure of No. 2 of Dr. Hirst, in which a replacement of a retroverted uterus caused instant relief. I have usually made the injection directly under the skin and find no more reaction there than when placed intra-muscularly. There has been no reaction so far as the skin was concerned. In one case in which twice daily injections were employed the pulse ran up to 110 for a few days, but it seemed to have no other effect.

Four of my cases were of the pernicious form. An emptying of the uterus was seriously debated. They all more or less quickly, were controlled by the above method. I am of the opinion that had Dr. Hirst pushed to a larger dosage and combined it with acidosis treatment in the cases he has spoken of as failures and to which no reflex cause could be ascribed, that he would have scored successes in them as well.

Admitting, as Dr. Hirst does, that a few cases do not imply that we have arrived at a specific remedy for this disorder, I still am firmly of the opinion that in the few I have so far studied that we have at least the be-

gining of a marked advance for their relief. I realize that it is perfectly possible to draw wrong conclusions. But when in a series of over fifty cases combined, such splendid results have been so far attained, it certainly seems that in this procedure or ones somewhat akin to it, that we will in part be able to add to the comfort of our expectant mothers.

One swallow does not make a summer, nor do even a hundred cases prove that there may not be flaws in a theory. But I urge that serious study be given along the lines suggested. I know of no method that promises half so much. If there is, I will certainly adopt it. It is safe. Not one of my cases had any symptom of abortion. In only one was the pulse affected, and that possibly was due to other causes. In all the nervous symptoms improved. No effect was noticed in the eyes or hearing. The bowels, if anything, were looser. The urine became more normal. The breathing was less labored, due doubtless to less violence of nausea or its absence. Hence I conclude it is worth thorough, critical, but fair trial.

DISCUSSION OF DR. BARNETT'S PAPER.

Dr. L. S. Hardin (Atlanta): In young women, about the period of married life and during the first pregnancy we have quite a little nausea due to pelvic reflexes, and this, I am quite sure, is due to hyperthyroid conditions, the nausea being a thyroid toxemia instead of a reflex directed to the stomach. This nausea during the first months of pregnancy I believe is due to the tension on the uterus and disturbance of the central nervous system, and it is then we get our psychic vomiting. If it is not ended by the fifth to the seventh month it is quite serious, and I think at that time it is indicative of a continuous hyperthyroidism; if during the further stages of pregnancy a toxic condition exists, and then in the progress of pregnancy some exciting cause occurs by which we get central nervous disturbance. The condition is of more gravity in the sixth or seventh month than any other time. We know that from the fifth to seventh month the thyroid becomes enlarged and stays so until after delivery. If this is not recognized or does not occur we have an eclampsia, which is generally supposed to be due to kidney or liver disturbance. Consequently the treatment, from my viewpoint, is first

to look for pelvic irritation and relieve that. That may be due to a displaced uterus or to some other pelvic condition, an active leucorrhea, etc. Therefore, if you remove the cause of the irritation of the central nervous system first you prevent the excessive action of the thyroid gland and the toxemia resulting therefrom. The nausea is not a disease of the stomach, but simply a toxic condition of the blood resulting in the reflex to the stomach. In some cases I have used morphine until I could get the patient quiet by bromides, and then thyroid extract until the hyperthyroidism was controlled.

I am very glad to hear Dr. Barnett's paper. It is something new to me, but it is along this same line. I thought he was going to use pituitrin. I have learned in the last eight months that hyperthyroidism after pelvic operation is controllable by pituitrin and ovarian extract.

Dr. S. T. Barnett (closing): I am sorry that Dr. Hardin did not hear the whole of the paper. It is along the line he has been speaking of. I have tried the thyroid extract, but the great trouble is that so far as I could tell it is not so amenable in the early stages as in the latter stages of pregnancy. I do not think it would answer the purpose. It is true that I have not tried it out as thoroughly as this, but I do not think it would answer the purpose as well as the treatment I have outlined. As to the use of pituitrin, it, of course, has a certain effect on uterine contraction, and unless used with a great deal of care might get you into trouble. I have personally not attempted to use it. I do know, however, that it has a great deal of effect along the lines he indicated so far as post-operative work is concerned, more particularly in infections, or in getting rid of the complicated conditions with gas following operative work, but I believe it would be a mistake to use pituitrin except with a great deal of care.

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PATENT MEDICINE AND QUACKS.***J. O. Elrod, M.D., Forsyth, Ga.**

In pursuing the same line of thought as last year I have no apologies to make to you because I feel there is nothing that is a greater menace to the public health of our state and nation today than "patent medicine" and quacks. We know this is true, but have not yet awakened to the extent to which it is true, and as the guardians of the health of our constituents we should try to protect them from these two evils whether requested or not. In an epidemic of any disease we have a clamor from the public for our services as protectors, but in the quiet work of these two insidious enemies to health, the public is unaware of the havoc wrought and quietly pursues its way with none to cry "Stop." However, I am very much gratified that during the past year there has been a great deal more work done along this line than ever before, both by the lay press and the medical profession and what I have to say will be largely what I have culled from the Journal of the American Medical Association, whose editor has written numerous editorials along this line. The column of "Propaganda Reform" keeps the profession posted as to what is going on in the fraudulent labelling of packages which is under very good control by "The Sherley Amendment of the Pure Food and Drug Act," but this has absolutely nothing to do with the advertising of patent medicines in periodicals and newspapers.

The Federal Public Health Department should have control of these two evils, but before this can be accomplished I think, as in the cause of prohibition each state, backed by the entire medical profession, will have to raise a cry for it and persistently show the evils brought about by present conditions and pursue this course even to the doors of the Federal Government itself. The government not only does not seem to be aware of the evils done its people, but is willing for the unsuspecting of other nations to become dupes of Patent Medicine manufacturers in our country. As proof of this I quote from editorial, Journal A. M. A., March 31, 1917: "Some days ago the news-

papers of the country received a press bulletin sent out by the Bureau of Foreign and Domestic Commerce of the Department of Commerce, Washington. The bulletin was marked 'Confidential—Released for Use of Morning Papers of Monday, March 19, 1917.' It dealt with 'American Remedies for Chinese Ailments,' and was a brief introduction to 'Special Consular Report No. 76,' issued by the bureau and entitled, 'Proprietary Medicine and Ointment Trade in China.' In due time the special report was received and from it we quote somewhat freely; 'Hygiene is practically unknown among the Chinese.' No country offers a richer field for proprietary medicine than China. The selling of patent medicines has proved to be successful largely, if not wholly, to the extent that well planned advertising creates a demand and thus ultimately gives the manufacturer maximum returns with minimum expenditure. It is positively asserted by one American who reaped a rich harvest of orders after a good publicity campaign that with sufficient advertising anything at all within reason can in time be profitably introduced to the Chinese trade. There is room for all kinds of proprietary medicines in China provided, of course that all such are reasonably efficacious for the ills for which they are recommended." This report goes to emphasize the fact that our government needs enlightenment on this line. The above also shows us that advertising is one of the strongest points of the "patent medicine" people. We do not dispute the claim of the advertising agencies that only 25 per cent of the business transacted in the country each day is the result of natural demand, the other 75 per cent being the result of salesmanship in one form or another and advertising is the greater part of this 75 per cent. Truman A. DeWeese, an expert in the advertising field, in an address before the Advertising Association of Chicago, says: "If a newspaper does not approve of the business methods of an advertiser, or has a suspicion as to the integrity or quality of the product, it should not accept its advertising." In commenting on this the Journal of the A. M. A., November 25, 1916, adds: "A necessary corollary is that the appearance of an advertisement in a newspaper implies that the management of the newspaper not only approves of the method of the advertiser, but does not even suspect the integrity or quality of the product advertised. Yet how

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many proprietors and managers of our newspapers would be willing to admit that they did approve the methods of the quack doctors and dentists whose advertisements they carry and that they did not even suspect the integrity or quality of the fake medicines they advertise." No less culpable are the periodicals published by Christian organizations who devote their columns to articles endeavoring to save souls and persuade their readers that souls in foreign lands are perishing because we are not sending them the Word of God, and yet in the same paper carry a weapon of destruction for their poor bodies. I fear they have not stopped to think what damage they are doing to the physical man by their pernicious advertising of patent medicines. In a recent issue of *The Christian Index* there were thirty-four patent medicine ads, in *The Wesleyan Christian Advocate* there were twenty-three, and I judge the papers of other denominations carry their full share. If approached on this subject they unhesitatingly tell you that their very existence depends upon these advertisements. It seems to me to be the duty of the physicians of these denominations to enlighten the publishers as to the harm done by these ads, and put the question squarely up to them: "Would you rather exist to do harm or die on the side of right?" I am happy to say that some publishers are asking a few questions before accepting matter of patent medicine firms, such as "Does the preparation contain any habit-forming or dangerous drugs?" "Is the product recommended for serious diseases?" But these are not sufficient, as was evidenced in the Sargol case. Both of these questions could have been answered negatively, but as you know no greater fraud was ever perpetrated upon an unsuspecting, easily duped public. Some publishers have gone even further. Desiring a sheet which could be read without embarrassment in the family circle they found it necessary to cut out all "patent medicine" ads which they did at considerable financial loss, but spiritual and conscientious gain. As an example, I refer to *The Lexington (Ky.) Leader*, as quoted in the *Journal A. M. A.*, April 7th. Among periodicals which do not carry patent medicine ads, I mention *The National Geographic Magazine*, *The Saturday Evening Post*, *Ladies' Home Journal*, *Woman's Home Companion*, and numerous others of like grade.

Mr. Deland, who has written an article on the psychology of advertising appearing in *Harper's Magazine* for March says: "The patent medicine man doesn't merely sell medicine; he gambles on the hopes and fears of mankind. Take this away and leave him only his medicine, and his profits would dwindle into insignificance.

Another strong point of the patent medicine vendor is secrecy and this is applied not only to composition, but extends even to the membership of the Proprietary Association which is the patent medicine organization of the U. S. A. The *Journal A. M. A.* of January 13, 1917, says: "It is a fitting commentary on much of the 'patent medicine' business that the organization which represents it should be so ashamed of its own membership that it is unwilling to make it public. 'Secrecy in composition.' This is the watchword of the 'patent medicine' industry, not only as it applies to its products, but also as it applies to its official organization." This association has unlimited means with which to fight any law which might be enacted to affect their sales. Under cover of liberality to charitable institutions they endeavor to ingratiate themselves in the good will of the public, but depend mainly upon retail druggists to fight their battles, as in the case of the North Carolina "Open Formula Law," which was recently defeated. Although this bill was introduced by the Board of Health of North Carolina and had the unqualified support of their recently elected governor, expressed in his inaugural address, it was defeated through the influence of the retail druggists who afterwards acknowledged they had been deceived by the patent medicine men. At the present time no state has an open formula law, though the city of New York put one into effect January, 1916. The same has been attacked by the patent medicine people as unconstitutional, and for this reason is not operative. I gave you a copy of their law last year.

The laws of Nebraska, South Dakota and Oregon require that every remedy sold for treatment of livestock shall have on its label the name of each therapeutically active ingredient and specifically provide that the term "Livestock Remedies" shall not include proprietary remedies designed for humans, but used occasionally for lower animals. Are we to infer that the citizen of these states values the life of his calf above that of his

baby? However, this is a move in the right direction and may lead to greater things.

Now the question arises, how can we remedy present conditions? The American Medical Association devised a plan which I think is worthy of imitation. On February 9, 1916, their Board of Trustees appointed a committee to call on the president and urge him to recommend to congress the appointment of a commission or special committee empowered to investigate the entire subject and to publish its findings for the enlightenment of the public and for the welfare of the nation and to aid congress in enacting remedial legislation, if such be deemed necessary. I think it would be well for the Georgia Medical Association to make a similar request of the governor of our state and also urge an open formula law to be introduced in the next legislature. I shall make this suggestion before the House of Delegates before this convention closes. In reality this should be done through the State Board of Health, but unfortunately we are laboring under the disadvantage of having no full time officer—that brings me to say that I think we should also ask our legislature for a larger appropriation for our Board of Health so it may make fuller investigations along these lines.

Then a most efficacious remedy is publicity, more publicity and more publicity. I quote a fragment of an article appearing in *The Ladies' Home Journal* for April: "But there are people in this country able and unafraid to tell you the whole truth about the 'patent medicine' fakes and dangers. The Propaganda Department of the American Medical Association knows even more about them than the government itself; and, what is more, it has as its sole purpose their exposure to the medical profession and to the public.

"To the limit of its capacity, this Propaganda Department, supported by the medical profession, is willing to help and to advise you. So, if you are in doubt as to the honesty or value of any particular preparation, or wish to help in the cause of educating the public, communicate with this organization at 535 North Dearborn Street, Chicago, Ill. As a matter of courtesy, you might include a two-cent stamp with your letter when asking for assistance."

The Journal A. M. A., April 7, 1917, commenting on this article, says that the day after this issue reached the public letters

began pouring in and since that time they have been literally inundated with inquiries from all parts of the country. Today this gives you some faint idea what publicity will do. People, as a rule, love to do the right thing if they only know how.

I come now to the most painful part of my subject, because it deals with the misconduct of some members of our own family. I refer to members of our profession commonly dubbed "Quacks," who allow their names to be used by patent medicine vendors and thus place a stigma upon our noble profession. I cite the men who swore for the Chattanooga Medicine Company in the Wine of Cardui suit against the American Medical Association, as well as those who swore in the Sargol case. These men being members of their respective county and state associations were eligible as fellows of the American Medical Association, when honor should carry with it a guarantee to the public that they are men of integrity and possess at least a fair knowledge of their profession. Our own conduct is reprehensible if we are not very careful whom we admit to our body, and are not swift to punish every culprit as far as the law allows.

DISCUSSION OF DR. ELROD'S PAPER.

Dr. W. B. Hardman (Commerce): The quacks and patent medicines, like the poor, we have always with us, and I suppose we always will have them, although in the future not so much as in the past. Like the poor, they will disappear more and more. As people become better educated and more efficient in their work there will be less poverty, and as physicians become more efficient with regular remedies there will be less patent medicine and less quackery. The whole thing is expressed in the word "education," which is, in a nutshell, "publicity." You must have publicity in order to get education. It is said that a drowning man will catch at straws, and you can not blame him. It is true that a great many of the users of patent medicines are catching at straws, but it is up to us as medical men to teach the public a great many things they do not know. These very glaring advertisements are catchy. If you read where a certain man took a certain remedy and was saved from the grave, or the surgeon's knife, and you thought you had a similar condition, you might snatch at it. I read a pretty

good Ford story the other day. A man was driving a Ford out in the country and ran out of gasoline. He stopped and asked a farmer if he had any gasoline, and the farmer said he did not, but he had a bottle of Tanlac. So the fellow poured the Tanlac into his machine and started back, and when he got to town he found he had a Packard Limousine—all from one bottle of Tanlac.

These people are hopeless; they want relief, and to go back to one of the papers this morning, if we, as a medical profession, are to help them we must be more thorough in our examinations and diagnosis. Don't simply look at the tongue, ask them if their kidneys act well, and give them a tonic. Go into thorough examination and diagnosis.

I had an experience not long ago with a strangulated hernia. I was called at 12 o'clock Sunday night to see this man who had a strangulated hernia that the doctor could not reduce. I put him under an anaesthetic, but could not reduce it, so the only thing to do was to get him to a sanitarium where an operation could be done. While he was under the anaesthetic we put him into the machine prone on his back, lifted his knees against the side of the automobile, and a man took his head in his lap, and we started on the eight-mile drive to the sanitarium. Well, the constant pulling reduced the hernia before we got to the sanitarium. Now that fellow could have had a flaring ad, "Saved from the surgeon's knife! I was attended by three physicians and they failed to relieve me, but after taking one ride of eight miles in a Ford, I was completely cured of strangulated hernia." That is the kind of things these gullible people believe.

Dr. C. I. Bryans (Augusta): I do not know of any better way to discuss this subject than to tell you something of what we have done here in Augusta along this line. As Dr. Hardman says, "The poor we have always with us," and in Augusta we still have the poor, but we have fewer quacks than a few years ago.

This matter has been taken up with our local society a number of times, and we have tried to do something with it, but we have failed—as has every other society—because of the fact that these men always get the sympathy of the public by putting up the cry of persecution, professional jealousy, etc., so to avoid this I took the matter up with the Rotary Club of Augusta a few months

ago. I was asked to make a talk and I asked that I be given the subject "Quacks and Quackery." I made this talk and it was really a revelation to most of the members; they knew nothing about it and a good many of them were not ready to accept the statements I made. I created a good deal of interest and the president appointed a committee on quacks and quackery to investigate these charges I made against some of the men practicing in Augusta, and we began an investigation. Just about that time there was appearing in some of the Augusta papers a full page ad that Dr. J. Newhall Kirk was coming to Augusta on a certain date, having offices in the Harrison Building. He claimed to be a radio specialist and he was fitting up the finest offices in Georgia and could cure all manner of diseases. The first thing I did was to write to the American Medical Association for information about this man. In all his ads he claimed he was ex-house surgeon of the Wills Eye Hospital of Philadelphia, special instructor in the Philadelphia Polyclinic, and held certificates from most of the large colleges throughout the United States and Europe. In reply to my first letter to the American Medical Association they wrote this:

September 26, 1916.

Dear Doctor:

We have received your interesting article from the Augusta (Ga.) "Chronicle" of September 20, 1916, together with your inquiry of September 21, regarding one J. Newhall Kirk, which has been referred to this department for reply.

Our record of John Newhall Kirk shows that he is a graduate of the Medical College of Ohio in 1895, and was licensed in Colorado (year not known), in Pennsylvania in 1903, and in Tennessee and Georgia in 1905, in the latter state by the Electric Board. We find, also, that he was licensed in New Jersey during the present year (1916). His name appears in the medical directories first in 1896, when he was practicing in Denver and Eastonville, Colorado; again in 1904 in Philadelphia, in 1908, in Nashville, Tenn., and in 1914 again in Philadelphia.

There is a J. N. Kirk listed in our files in connection with the "Electro Radio Doctors" who have been before the courts in several states. This J. N. Kirk was convicted of illegal advertising in connection with the "Electro Radio Doctors" and fined \$100 in

Nashville, Tenn., according to the Nashville "Banner" for October 17, 1911. Whether J. N. Kirk and John Newhall Kirk are the same we do not know.

In this connection you may be interested in learning that the Wilmington, Del., "News" of November 20, 1914, records the arrest of one Louis B. Coates, also known as J. Newhall Kirk, M.D., for practicing medicine without a license.

According to the Bulletin of the Lancaster (Pa.) City and County Medical Society for April, 1915, a copy of which we have in our files, Kirk was investigated by the attorney for this society, who reported as follows:

"Dr. J. Newhall Kirk, Lancaster City, Radio Treatment. After two weeks' practice was driven out of town and forced to make a money settlement with some patients under an attachment issued by me and a levy obtained on his paraphernalia."

You asked whether Dr. Kirk was actually connected with two Philadelphia institutions as claimed in his advertisement. We have no evidence that he ever had any connection with the Philadelphia Polyclinic Hospital. We would suggest, therefore, that you write direct to this institution for such information as they may have regarding him. The address is 1818 Lombard Street, Philadelphia.

We understand that Dr. Kirk was, at one time, connected with the Wills Hospital of Philadelphia, as he claims. If you will write to Dr. S. Lewis Ziegler, Executive Medical Office, Wills Eye Hospital, 1810 Race Street, Philadelphia, we believe he will be able to give you some interesting information regarding Kirk.

Under separate cover we are sending you complimentary copies of two of our pamphlets "Medical Institutes" and "Men's Specialists," which may be of interest to you in this connection, as they throw some light on the methods of advertising quacks.

Yours very truly,

JOURNAL AMERICAN MEDICAL
ASSOCIATION,

Propaganda Department,

Dr. C. I. Bryans,
201 Leonard Building,
Augusta, Ga.

I am sorry that I can not read you more of the correspondence I had, but in closing I will say that we succeeded in sending Dr. Kirk on his way from Augusta.

Dr. J. E. Anderson (Columbus): A short time ago I saw in a magazine a little article "What Shall We Do?" After talking to the dear people and stating the evils that exist, it stated that people were getting mighty tired of lawyers making laws for lawyers, and lawyers executing laws for lawyers; and also getting tired of medical men handling medical matters for medical men. Now, then, the legal profession, I am sure, does not need any defense, because they are able to defend themselves, and do. But the medical profession have been sitting quiet and allowing a whole lot of things to go unsaid. If we expect to do anything we must fight this thing tooth and toe-nail, now and forever. A few years ago the older physicians, when this matter would be discussed, would say, "The best thing you can do is to ignore them; they will always be here." But we do not believe that now. A short time ago I saw a little article in a medical magazine (but it has been my experience that the laity do not read the medical magazines. If they did it might put a different face on things). I am sure the most of you saw this article. It said that the average citizen will give a lawyer \$500 to defend him and a sighs praises around the world, to keep him out of the penitentiary for from two to ten years; but he kicks like a bay steer if a doctor charges him \$10 to keep him out of hell for life. It also said that the doctor is the only laborer who stays on duty for twenty-four hours a day, 365 days in the year, and keeps on working for people after they cease to pay him. Medical men have not taken enough interest in legislating and in fighting these evils that exist among us. The trouble is the minute the doctors ask for anything they think they have an axe to grind. It is the popular belief that if the doctors ask for any kind of legislation it is for their own benefit. The thing for us to do is to discuss this matter publicly, educate the people that we are not in this solely for the loaves and fishes; that we are really and honestly trying to keep them from getting sick.

Dr. A. M. Clark (Macon): I do not wonder that the patent medicine men are eager to get their advertisements in the county

paper, when we reflect that the good brother in the country usually takes only his county and perhaps a religious paper, and when the county paper comes in along about Thursday or Friday he has time to sit down and read, and, of course, he reads the ads. The gentlemen who mentioned education struck the keynote. We know it is a sad fact that the people are the least educated along medical lines, and the average man in Georgia thinks if a young fellow has a diploma from a college and is licensed to practice that he is as good as any other doctor. Some time ago in discussing the management of our paper—The Christian Index—I said no paper could do its best work as long as it had in one corner of the page "Lay aside on the first day of the week as the Lord has blessed you," and then on the next page, "Buy So-and-So's Asthma Cure." It is easy to make new laws. We have too many laws now. The best thing for Georgia would be to prevent the legislature from meeting for a few years. We have too many laws that we ignore. I hope that this war will bring to us an awakening of the people of the present age to reverence and respect for law. Let us try to educate people along these lines. Education is the plan. We medical men can do more along that line than any other. Do not make new laws, but let us try to educate the people.

Dr. T. J. McArthur (Cordele): A great deal has been said from time to time about these evils, and the general opinion is that publicity and education is the only relief. I want to suggest a plan that every one of us can put into operation to some degree. If every medical society, every local society, would appoint a publicity committee and make it a point to put on that committee physicians with discretion and judgment; this committee to make it their duty to look after little clippings and extracts from magazines, from the Journal of the American Medical Association and other papers and magazines that are doing a great deal along this line, bring these clippings and extracts to the local papers; first convincing them of the harm that is being done by patent medicines and quacks, they will win over the most of them and get them to co-operate with us. We have done some of that work in our county. We have not done as much in the last six months as two or three years ago, but I believe we can accomplish great

good throughout the state if we make an effort along this line. I make that as a practical suggestion.

Dr. J. O. Elrod (closing): I want to speak of some of the members of our profession who allow their names to be used by patent medicine companies for witnesses, as in the Chattanooga Medical Company, the Wine of Cardui case, and the Sargol case. You will find that some of the men who swore in these cases were members of their county and state societies and, therefore, eligible to the A. M. A. It is clearly up to us to attend to this kind of fellows. We ourselves need education as well as the dear public. One of these fellows can do more harm than a half dozen can correct. What are you going to do with these fellows? It means the education of our own profession. I feel that education and publicity is the most important thing. Dr. Dowling, of Louisiana, has done a great deal along health lines, and has succeeded in having enacted a law similar to that of New York, but so far it has not been put into operation. There is not a state in the Union that has an open formula law that controls patent medicines. Then we have doctors who own drug stores that are selling patent medicines and using them all the time. So we must get to work and correct our own men as well as the men outside. Dr. McArthur's plan is a good one. If you will refer back to the Journals of the American Medical Association you will find that a great many small papers carry advertisements by contract with publishing agencies, and if they refuse to take the patent medicine advertisements these agencies cut down their other ads, so they can not afford to do it. Oftentimes advertising agencies are connected with some patent medicine business, and, of course, insist on the ads being carried by the small town papers. It is all a matter of education as Dr. Clark says, and I do not see why the state of Georgia should not be the first to put an open formula law on her statute books, as she has the bone-dry law in the case of prohibition. Let us try to get the legislators to give us some laws that are worth something. We may not be able to put them into effect at the present time, but we have a governor whose brother is a physician, and now is the time to get after some of these things—the best time we have had since I have been identified with the profession.



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AUGUSTA, GA., AUGUST, 1917

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INTENSIVE FATTENING; SOME RESULTS IN THE ABDOMEN.*

W. W. Blackman, M.D., Atlanta, Ga.

The Roentgenologists have given us new light on the position of the abdominal organs in health and in disease.

We know that in a great many tall, thin persons the stomach and colon are lower than formerly thought normal. We know that not all people with low viscera suffer with symptoms of enteropotosis, nor, in those who do, are the disturbances encountered at all proportionate to the degree of ptosis. Their severity does seem to depend on the general physical and nervous condition of the patient. Accordingly as he is muscular, with good general tone and stable nervous system, or weak and flabby with poor nervous reserve, so will his symptoms vary from a few simple, well defined ones to legion.

It is fair to conclude from a study of the mechanism involved, and it is a fact well demonstrated in practise, that for a cure of the manifestations of visceroptosis, there are, as far as the abdomen is concerned, two great desiderata—first, restoration of intra-abdominal pressure; second, restoration of visceral tone.

Intra-abdominal pressure is palpably a matter of the tension exerted upon the abdominal contents by the abdominal wall.

Visceral tone is dependent upon good nutrition, good nerve influence and proper support.

That the normal maintenance of position of the abdominal organs is not by virtue of their peritoneal ligaments alone has been shown by holding the cadaver in the erect position when the upper viscera at once pro-lapse.

In ptosis patients among women who have undergone multiple pregnancies, or in men or women who have lost much fat, even tho the recti may be capable of firm contraction, it will be found that the lateral walls of the abdomen are extremely relaxed. When such

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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a subject attempts to rise from a recumbent position to a sitting posture, the intra-abdominal strain forces out the lateral walls, producing more or less bulging at the sides. In types of congenital habitus enteropticus, there is very much less laxity of the abdominal wall, the abdominal contour is scaphoid and the iliac spines prominent. In the erect posture, there is flattening above the transverse umbilical line and fullness below.

Mechanical appliances are widely employed to supply the needed wall support, and have given us all much help. Results from their studied use, palliatively, of course, are many times excellent.

However, if we would naturally and to the fullest extent restore abdominal pressure and visceral tone, correct visceral stasis and banish the neurasthenic and digestive symptoms due to tension upon the splanchnic vessels and nerves and to vagus irritation, if we would do these things and give our patient a competent abdominal wall of his own, we must deposit fat in the abdomen and develop the lateral abdominal muscle group—the transversalis and the obliques.

Failure to enforce the regular performance of two or three simple abdominal exercises twice daily would constitute a serious neglect.

The problem of fattening the patient suffering from ptosis in anything like a short time presents real difficulties with which all are familiar. The rather constantly associated neurosis, dyspepsia, constipation, insomnia, gas pains, et cetera, are troublesome. More serious obstacles are anoxia, nausea, deficient emptying of the stomach and poor digestive secretions.

I believe that as a practical method of inducing feeble and disabled digestive organs to rapidly work out their own salvation by surrounding themselves with fat and to rebuild bodily tissue in general, the Milk and Rest Cure, as we have used it at the Sanitarium for the past several years, has much to commend it.

This treatment consists of rest in bed for a period of from 4 to 6 weeks, or even longer in severe cases, the consumption of 5 to 7 quarts of milk per day, and the daily administration of tonic and mildly eliminative hydrotherapy.

An exclusive ration of whole, sweet milk is given in 6 to 8 oz. quantities every half hour from 8 A. M. to 8 P. M. A quart of rich milk yields nearly 700 calories, and 5 to

7 quarts, 3,500 to 4,900 calories, in proper balance and rich in the vitamins. Since 2,000 calories per day are ample for the support of a resting patient, the intake and assimilation of 3,500 to 5,000 calories per day represents a tremendous profit to the organism. Furthermore, our patients appropriate this diet in comfort, and usually with great relief from former distress on solid food. Four to five pounds per week is the average gain in weight. This increment consists of good blood, muscle, fat and glandular tissue. The patient returns easily to solid food on completion of this treatment, and quickly acquires his maximum strength.

Rest in bed is a factor the importance of which cannot be exaggerated. The patient soon learns to relax thoroughly, and usually, after the first two or three days, when the nervous tension has worn off, is glad to stay there. The upright position is the first predisposing cause of visceroptosis. Without it, there would be no such condition. Assuming the recumbent position, then, is the first step toward removing the cause. While in the horizontal position all stress and strain due to pulling of the viscera on the organs higher up and on the splanchnic nerves and vessels are avoided. Most nervous manifestations of this condition would be relieved by this alone. Rest in bed conserves the bodily nutrition and fosters repair. It favors warmth of the extremities, equalizes the circulation and gives sway to the digestive processes. Lying on the right side assists in emptying the atonic stomach.

The Milk Cure,—as is any system of forced feeding,—is an active exercise for the digestive system. It is a call on it for a great deal more work than it is accustomed to do.

The result of any well regulated exercise, when continued for a reasonable period of time, is to build up muscular strength and tone with an actual increase of muscle tissue. I believe this is exactly what occurs in the stomach and intestines during the Milk Cure. This, and more: the large amount of food has to be digested and assimilated and for these are needed a greater quantity of digestive juices, and increased absorptive power and circulation. In this instance, nature meets the demands made on her by greatly increasing the peristaltic and glandular capacity of the digestive organs.

Malnutrition is the precursor and accompaniment of most chronic disabilities, especially the one with which we are dealing.

Dr. S. Weir Mitchell remarked that there was a great class of cases desirable to "fatten and redden." He further said that "the mere addition of blood and flesh is not what we want, but that their gradual increase will be the visible result of the multitudinous changes in digestive, assimilative and secretory power in which the whole economy inevitably shares." The whole economy inevitably shares in the benefits conferred by the treatment just described. The patient comes to you, thin, cold, pale and neurotic; he leaves you fat, warm, red and poised.

Three case reports follow, which I have made as brief as I could.

Case 1.

Miss B., age 29 years. Family history good.

Patient had typhoid fever with peritonitis seven years ago. Since then she has suffered at intervals with attacks of pain in left side in the region of the descending colon. The attacks occur at intervals of a few days to a few weeks, and last from two or three days to two weeks. The pain is severe and steady and the attacks very weakening. Her appetite is good and there are no apparent digestive disturbances. There is moderate constipation; some backache.

Physical Examination: Patient 5ft. 5in. tall; weight 109 1-2 lbs. Heart and lungs normal. Abdomen showed tenderness, particularly at splenic flexure and over recending colon. Abdominal walls thin and relaxed.

An X-Ray examination was made with the following findings: Colon injection shows slight angulation of the hepatic flexure; colon arches above umbilicus, and, dropping down, is attached to the pelvic sigmoid juncture. There is a folding backward from this point to the splenic flexure, due to peritoneal adhesions. The sigmoid is redundant and the rectal ampulla dilated. After 24 hours there is a large residue in the entire colon.

The patient was put to bed February 21st and given 6 quarts of milk per day, appropriate hydrotherapy and exercises. She experienced no discomfort and complained of hunger, so the quantity was increased to 7 quarts on the 25th, and later to 7 1-2 quarts. She continued the treatment five weeks, when she weighed 130 1-4 lbs., a gain of 20 3-4 lbs. She had no pain whatever while on the

milk diet and up to the present, has had no return of her former symptoms. Red cell count had increased from 3,870,000 to 4,480,000.

A second X-Ray examination was made of her by Dr. J. S. Derr, two days after she went back to solid food. This showed very little change in the adhesive distortions of the colon, but the hepatic flexure was considerably less angulated and the colon atony and residue notably decreased.

Case II.

Mrs. H., aged 39 years; 2 children, 17 and 13 years. Family history negative.

Present trouble began shortly after birth of second child. During labor had severe pain in left side. It recurred in three or four months and again in a year. More or less constant from that time until four years ago, when an abdominal support relieved it. It returned three months ago, despite mechanical support, and has persisted night and day. The pain is a steady ache below lower margin of ribs on left side about the axillary line and in the left groin. Does not seem to be related to indigestion or menstruation. Patient has painful indigestion with sour stomach, sense of fullness and a great deal of gas. Appetite poor; is badly constipated—takes a laxative every day. Occasionally has some rectal discomfort and bloody stools. No mucus. Menstruation has been irregular and excessive for a few months. Is slowly losing weight.

Physical Examination: Patient thin and anemic, weight 97 1-2 lbs., 5ft. 3in. tall. Heart normal, pulse 68. Bronchial breathing over both upper lobes. Vocal fremitus and whispered sounds increased in right apex. Abdominal wall markedly incompetent; tenderness over ascending colon and hepatic flexure; slight tenderness over descending colon. Both kidneys slightly displaced.

An X-Ray examination disclosed the following: Stomach long and atonic, extending, left of mid-line, from 11th rib to lower pelvic brim; transverse colon sagging in the middle to level of crests, sharp angles at hepatic and splenic flexures but no evidence of adhesions.

Patient was put to bed; abdominal fomentations, tonic baths, massage and specific exercises were instituted. She was given 6 quarts of milk daily for six and one-half weeks. She gained 28 lbs. Was free of her

dragging side pain and stasis symptoms throughout.

Another X-Ray examination was made by Dr. Geo. M. Niles a week after the patient had gotten up. The lower end of the stomach was at the level of the iliac crests, the transverse diameter was noticeably less and good peristaltic contractions were shown in its outline. By injection, the transverse colon was shown about 2 in. higher and its angles decreased.

In this subject the red cell count rose from 3,420,000 to 4,360,000. At the time of her discharge neither kidney was palpable. Ten months later she reported that she was entirely well and had increased in weight about three pounds.

Case III.

Mr. C., age 60, bank cashier. Height 5ft. 10in. Weight 114 Lbs. Weight 18 years ago 150 Lbs. For 17 years had been a great sufferer from pain in right upper quadrant of abdomen. It was necessary for this patient to go home early each afternoon, go to bed, refrain from further food and drink quantities of hot water to make his life endurable from 4 p. m. to 4 a. m. Exacerbations of his condition would take him from his business one to five months of each year. At such a time the jolt of an automobile, going as slowly as four miles per hour, gave him excruciating pain. His physician in Brooklyn referred him to Dr. Eastmond, of New York, for X-Ray, who reported no intrinsic lesion of the stomach or cap, but adhesions of the pyloric end and second portion of the duodenum to the under surface of the liver. He believed there had been an old disease of the gall bladder, which with an associated perihepatitis, produced the adhesions. Greater curvature was 4 inches below the umbilicus. Pylorus and cap presented abnormal angulation with the stomach. Dr. Zabriskie recommended operation but a gastro-enterologist forbade it and endeavored unsuccessfully to fatten the patient. The usual constipation was present, requiring castor oil and a daily enema. Dieting had but little effect upon the pain. There was no vomiting nor nausea. The patient was of a nervous temperament. Annoyance and being startled provoked the pain which seemed to be due to spasm or a gas pocket, or both, at the site of the angulation in the duodenum.

During four days preparatory treatment, after coming under our care and while upon

solid food, he had a discouraging amount of pain and I felt that we were doomed to failure. However, we put him on a regime of rest in bed, abdominal fomentations, tonic hydrotherapy, exercises for the relaxed abdomen, mineral oil and agar, and six quarts of milk daily. The first and second day he had practically no pain; the third day there was some early pain, which was relieved after the first few glasses of milk. After the first week, and for the seven months since, he has been practically free from it. He gained 22 Lbs. in weight in 5 1-2 weeks. He returned to solid food and ate voraciously without penalty. His red cells had increased from 4,050,000 to 4,720,000. His weight is now 140 lbs.—a gain of 26 lbs. His nervous symptoms and constipation are inabeyance. He writes that he is well.

Conclusions.

Viscerotonic conditions, if not complicated by too severe adhesions, can be functionally cured by a regime that includes rest in bed, abdominal exercises, and a forced fattening diet.

Relief through tissue building by this intensive method is rapid. In the face of nervous and digestive abnormalities, patients gain an average of four or five pounds per week. A satisfactory and lasting result can usually be secured, even in bad cases, in the very short period of five to six weeks.

This is accomplished by reason of the following changes relative to the abdomen. First, development of a competent wall; second, increased deposit of fat around and adjacent to the viscera, with shortening and thickening of the mesentery, better position of organs and heightened intra-abdominal pressure; third, increase in strength and tone of the visceral musculature with improved peristalsis and emptying of the alimentary tube; fourth, increased capacity and activity of the digestive glands.

Highly vital to the result, also, are the constitutional effects wrought by this regime. Anemia and nervous instability are corrected and the patient is placed upon a basis of nutritional affluence.

—Robertson-Blackman Sanitarium

An advertisement in The Journal of the Medical Association of Georgia will bring results. Rates sent on request.

THE IMPORTANCE OF CAREFUL EXAMINATIONS BEFORE ADVISING SURGICAL OPERATIONS*

By E. C. Davis, A.B., M.D., Fellow American College of Surgeons.

This subject has been made impressive by the number of times after the usual routine examinations and the recognition of certain local lesions, an operation was performed and either a condition entirely different or other pathological conditions were found of organs not suspected.

Patients with rectal hemorrhage and presence of hemorrhoids which have been operated on and later a carcinoma of the rectum found.

Patients with obscure sciatic pains with later the manifestation of some malignant pelvic tumor. Again, how often do we find a beautiful scar over the area of appendix, especially the transverse or the McBurney, and a lesion of the right kidney, gall-bladder or right tube, ovary or uterus much more serious than that of the appendix. In fact, how often is the appendix removed when really it is not the offending member, and the cause of the pathology passes unrecognized and unremoved, especially when the small incisions are used which do not allow us to examine other organs and tissues not directly under the narrow point of incision. Again, some of us are not using the so called instruments of precision for diagnostic purposes as freely as we should. How many cases of abdominal pathology are subjected to X-Ray diagnosis by an expert before operating? How many now fail to secure the benefits of careful laboratory investigations by one trained in these methods?

How many are brought to the operating table before a skilled internist locally passes an opinion as to whether an operation is justified? Again, how often has an operation failed to relieve because of some latent pulmonary lesion accentuated by an anesthetic or the lowered resistance brought about by an operation? A quiescent Nephritis is aroused into activity by operations and many

patients are sacrificed by a failure to test the kidney functions before operations.

Relying, as many do, upon the simpler tests for albumen and casts, and often these tests made by inexperienced persons not competent to render an opinion in so grave a condition as a human life.

Hasty diagnoses and rash or ruthless operating has led to efforts at legislative restrictions being placed upon such procedures.

The reckless desire to operate with the glamour and spectacular possibilities has caused too many to undertake serious surgery and filled the country with operators. Keep in mind the great distinction between the true surgeon and the operator. The former only resorts to surgery in order that life may be saved or some pathologic condition corrected which may restore the patient to a more nearly normal state. The operator is often obsessed with the desire to shed blood, and as one surgeon stated, "will operate on any one who will lie still long enough." Surgery should be removed from such possible criticism and placed upon a plane too high for such possibilities. The need for thorough preparation and training the maturity of surgical judgment are the great essentials for the perfection of surgical advancement and elevation above mediocrity of the greatest of all branches of our art.

Much more skill and judgment are necessary often to tell a patient that an operation is not necessary than to operate if the operation is not justified. Another serious fault, quite often the surgeon in the city must confess to a guilt in allowing the doctor to make a diagnosis for him on clinical signs alone, and operate on this diagnosis before taking time to thoroughly study and prepare the patient for this serious ordeal.

The safe rule is to be in surgery a true skeptic and verify every opinion, using all the possible aids available, and even then, the embarrassment of a mistaken diagnosis will be brought to your attention by the revelations at the operating or autopsy tables with surprising frequency. The surgeon who never errs is only deceiving himself and placing a premium on incomplete investigations, imperfect diagnostic means, and rarely witnessing an autopsy.

As far as possible, every case that dies after operation should have an autopsy by a skill-

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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ed pathologist, and the surgeon who operated should be present to see if there has been errors of omission or commission. If this plan was more frequently carried out there would be many less indiscriminate operators and more care taken to arrive at accuracy of diagnosis.

This paper has been written with a view to arouse an interest and liberal discussion of a condition that demands the most serious thought and attention at this time.

DISCUSSION OF DR. DAVIS' PAPER.

DR. GEORGE R. WHITE, Savannah: I think we have had presented most admirably the most serious problem in surgery. It is not technique, it diagnosis which confronts us, and it is not make a diagnosis and finding the trouble, but making a complete diagnosis. Things do not come singly in surgery; one lesion leads to another, and the pity of it is that when we look back on an erroneous or incomplete diagnosis we very often can say, "If we had been more careful we could have avoided this." One thing that is very important is to make two examinations of the same kind. It has been my custom with every patient to make an examination and then have somebody else go over the patient, and then compare notes, and I find by doing that I do not go very far before I see somewhere that I have missed something and the other man has found it.

DR. GARNETT W. QUILLIAN, Atlanta: Some twelve years ago I saw a cartoon, and Dr. Davis' paper has brought it to my mind. It was a picture of a mansion labeled "Success" away back in a grove behind a big gate, which was marked "Opportunity"; and leading up to that gate was a young man holding in his hand a key on which was written the word "Preparation." Below this cartoon was this expression: "Preparation is the key that unlocks Opportunity's gate leading to Success." So the success of the operator is the success of his patient. First of all he must make careful diagnosis of the condition, after examination of the patient. Quite recently a patient came to me who had been examined by quite a few doctors, complaining of a loss of vitality, but said the doctors had found nothing that would account for her condition. I examined the

chest and found nothing much there, the back and lumbar region seemed to be negative. Upon inquiry as to whether there had been any trouble in the pelvis, she replied in the negative, but in order to make the examination complete I suggested that we make a pelvic examination, and when I did so I found a carcinoma which explained her condition. I think every woman should at least once in twelve months present herself to her physician for a pelvic examination, because frequently in multipara you will find carcinoma developing from latent scars of the cervix. So if we achieve success in surgical procedure it is necessary to make a thorough diagnosis first; by a careful and complete physical examination, and secondly, by employing freely the laboratory of an expert pathologist and using liberally the X-ray, and in addition to that prepare the patient for operation, and one of the best preparations after diagnosis is made is to use sodium citrate and glucose, which tends to prevent shock and avoid post-operative acidosis, and finally the successful surgeon must himself be **prepared** to do his operative work well, so with the key of correct diagnosis, careful preparation of the patient, and accurate surgical skill, we may unlock opportunity's gate and achieve success!

DR. E. C. DAVIS, Closing: I simply want to emphasize the fact that I believe many of us are not using the proper means of refinement for making diagnosis that we ought to use, and I think Doctor White's suggestion an admirable one. A fine thing is the faculty diagnosis which are adopted by some institutions—where different ones make a diagnosis of each patient and then when time permits discuss these things. It brings up the diagnosis, and in time a diminution of the mortality will be apparent and the restorations to health on the part of the patients will be much increased. I am not speaking of acute conditions.

I was a good deal impressed with the disparagement that seems to be present in regard to laboratory work. I could not practice surgery today without laboratory methods. In fact I would want to give it up if I did not have the aid of my laboratory friends to correct my errors and sometimes make me not do things that my physical findings would cause me to do. I could not well practice my art without the aid of these men.

Then I want to emphasize a thing I did

not mention, and that is more universal use of thorough laboratory method like the Wassermann. I do not think we do that often enough. I believe it ought to be practically a routine in chronic conditions. I have lost one or two patients myself that if I had a Wassermann made at the proper time I would not have operated upon. All these refinement of diagnosis mean a great deal to the patients, and as has been said the success of the patient.

REVIEW OF TWO HUNDRED OPERATIONS FOR ACUTE ABDOMEN, WITH FIFTEEN DEATHS.*

Dr. R. M. Harbin and Dr. W. P. Harbin,
Rome.

The phrase acute abdomen has become commonly used as indicating any acute condition within the abdomen demanding immediate surgical operation, and may arise either from trauma or disease.

It may be remarked in passing that these 200 acute cases have arisen in a hospital experience of eight years' duration, and have been selected from a series of 650 total abdominal operations with 21 deaths, occurring in a miscellaneous experience of 1,760 operations with 29 deaths. A considerable number of emergency abdominal operations occurring outside the hospital are not included in this report because of a lack of proper records.

While a definite pathological diagnosis is not always practicable, it is of greatest importance to recognize early the presence of any acute surgical condition within the abdomen, as the ultimate results will measure up the diagnostic acumen of the attending physician. Any phase of the low mortality rate in this series of cases has been more influenced by the promptness of diagnosis made by our colleagues in the capacity of attending physicians than by any methods of operative technique that were adopted, and we have noted that physicians who have followed

their cases through operation have been the ones to deliver earlier diagnoses.

Because of indifference and inaccessibility on the part of some patients to call in the family physician, a cause of increased death rate arises. All of us have become imbued with the importance of scrutinizing very carefully the causes of all belly aches which patients at first esteem trivial in importance, and for that reason we should not wait to be called in making repeated visits until a diagnosis is arrived at. In view of the patient's indifference it may be necessary for the physician to explain the necessity of his visits.

The first 12 hours of an acute abdomen is the golden opportunity for making a diagnosis, and every effort should be expended to use well this valuable period of time for that purpose. Where trauma has occurred the circumstances should be studied in detail, for the nature of the injury may suggest the extent of the damage, and in a case of doubt it frequently becomes a conservative measure to operate. We have found that a majority of patients refer the cause of abdominal pain to some dietetic imprudence where there has really been no departure from the daily routine. This observation has offered aid in diagnosis of acute appendicitis which so often begins without apparent cause. Under these circumstances inquiry may reveal the history of a long period of vague dyspeptic and toxic symptoms, biliousness, etc., culminating in an acute attack.

In this series of cases the appendix was the focus of infection in 154 patients, or 77 per cent.

The following symptoms in the order of importance would seem to indicate the development of the acute abdomen; pain, at first without, but soon with vomiting, tenderness from pressure, accompanied by more or less rigidity, slight changes in the temperature and pulse in the early stages, with a moderate leucocytosis. Pain arises from tension, and after the escape of infection from such tension it becomes less severe, but more diffuse. Inflammation, by causing a roughening of the serous coats of the peritoneum, brings about friction which causes pain from peristaltic waves, just as pain from

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breathing in pleurisy, and abdominal rigidity becomes a conservative process. The Swedish surgeon, Lenander, first demonstrated that the parietal is very sensitive, while the visceral layer of the peritoneum is comparatively insensitive. This observation may be verified by opening the peritoneum under local anesthesia. But in the aged and obese patients there may be an exception to this rule, and diffuse peritonitis may become more or less masked by the absence of abdominal rigidity. This abdominal rigidity is the most frequent and diagnostic symptoms present. This symptom may be furthermore masked in post-cecal types of appendicitis where the inflamed surfaces do not come in contact with parietes, but we may have a referred pain in the right loin, extending downward simulating renal colic.

Observation of leucocytosis should be begun early and in obscure cases a steady increase should put the physician on the *qui vive*. A leucocyte count should be made every four hours in suspicious cases. Fortunately hemorrhages in the peritoneal cavity very promptly show up abdominal rigidity, and leucocytosis. Where the reason for and against operation are on a par, an increasing leucocyte count of 10,000 would cast the deciding vote. In severe cases the problem of diagnosis offers little difficulty.

In the presence of a flaccid abdomen without tenderness, with high temperature, we would be inclined to defer operation. However severe the pain may be, opiates should be withheld until the diagnosis has been made, and the treatment outlined, because after the use of opiates the symptoms entirely lose their significance. Morphine unquestionably has a favorable effect on the course of peritonitis by restraining peristalsis, thus lessening the amount of absorption of toxic material, and absolute fasting has the same effect in lessening the load of toxic contents within the intestines. The use of the stomach douche removes the regurgitant flow which is beginning to overburden the patient's vitality, and should mark the beginning of treatment of all cases of peritonitis. Having the diagnosis made the patient should be

given morphine hypodermically, and transported to the hospital in a sitting position.

The advantage of a complete equipment for operation and after treatment, as found in hospital, by far outweighs any damage arising from transporting a patient, except, perhaps, in a case of hyperdistended abscess.

Cases of peritonitis *in extremis*, ether, as an anesthetic, may become the straw that breaks the camel's back, and under these circumstances local anesthesia and nitrous oxide gas have a distinct sphere of usefulness. In any grave case of peritonitis narcotised by opium, the primary danger of asphyxia, as shown by cyanosis, may be precipitated by the anesthetic, especially nitrous oxide, which should be administered tentatively.

When operative procedure becomes prolonged ether may become necessary in some cases to subdue straining on the part of the patient provoked by manipulations which tend to spread sepsis.

The choice of incisions lies between the McBurney for suspected appendicitis, and the median or split rectus for doubtful cases. Where the infectious process is not far advanced, the incision may be closed in the usual way with plain cat-gut, and a stab drain on one side may be resorted to, as in gunshot wounds. Gridiron incisions may be closed snugly around the drainage tube with plain cat-gut.

A rapid technique should be striven for as much as is consistent with thoroughness, and if possible the pathological lesion should be radically dealt with.

The diseased appendix should be removed, if practicable, as the wound will heal more rapidly, and future trouble will be avoided. Conservatism in the matter of manipulations should be the rule in the management of cases of abscess. One death in this series of cases of abscess of the appendix was chargeable to undue manipulation in breaking down a protection wall of adhesions.

We have found that a suction apparatus is of great value in the operative technique of cases of peritonitis, such as the Chapman water pump, and Pool's abdominal suction tube, connected with a vacuum bottle.

Chemical antiseptics are damaging while sponging or mopping traumatise the delicate epithelial coats of the inflamed peritoneum and open up fresh lymphatics. If peristalsis causes pain and increases septic absorption, sponging and mopping would evidently cause greater damage. The suction method overcomes all of these disadvantages, and may work continuously without interfering with the progress of the operation. It should be the aim to remove all peritoneal fluids when apparently innocent.

There are two rules as to drainage; when in doubt drain and when in doubt don't drain. We still adhere to the former and older rule. Split fenestrated tubes with ravelless wicks make preferable drains, and one tube should be carried to the focus of infection and another to the pelvis to drain such gravitating fluids as may exist, and both should be anchored to the skin with a suture. The pelvic drain may be removed in 48 hours, while the upper one may be allowed to remain as long as needed, according to the discharge. Before the patient emerges from the anesthetic the stomach douche should be again used where peritonitis is at all extensive, being careful to avoid leaving any residual fluid in the stomach, and this precaution requires a bit of patience. We have introduced the stomach tube into the trachea three times in semi-conscious patients, but this accident can be easily detected if thought of, and no harm will result. We have made it a rule to keep a ready equipment of a stock solution of sodium citrate sterile with a packet of sterile instruments and apparatus ready for the transfusion of citrated blood, usually using some member of the family as a donor of blood. While the danger of agglutination is slight, and that of hemolysis still more remote, it is better to take these chances when unavoidable, for the relief of shock will be just as marked, even though sharp reactions follow. Unquestionably the transfusion of blood is our best method of combating shock.

The patient should be placed in the Fowler position and given saline infusions per rectum. While some urge that tap water is just as good, we have not seen any reason for believing that it is superior to normal saline solution. An empty stomach is absolutely essential to the successful technique of rectal infusions to flood the emunctories, and with the toilet of the peritoneum complete and by the judicious use of morphine the patient is at his best to fight the effects of peritonitis.

After 48 hours the successful absorption of rectal infusions will become hampered, but by this time the spread of peritonitis has become fixed, and at this time pills of ice may be allowed. Flooding the emunctories without provoking peristalsis is the great desideratum of treatment.

It is a mistake, for this reason, to attempt a through and through movement of the bowels before the fourth day, although temporary relief of the lower bowels may follow the use of a pint of turpentine enema. Any regurgitation into the stomach as indicated by epigastric distension should be promptly relieved by the stomach douche, and nurses should be trained in the use of the stomach tube.

From undue distension of the colon by enemata there is danger of forcing a fecal fistula where the stump of the appendix has not been inverted or is badly infected and fistulas are very common, for the reason that no ligature will continue to constrict the lumen of the stump in the presence of active infection. We have had no case of fecal fistula to leave the hospital unhealed, and have found in the treatment of fistula that by using wedged packs with bismuth paste greatly facilitates healing.

There has been in this series of cases no instance of acute dilation of the stomach or ileus, and post-operative nausea and vomiting have been an exceptional problem partly because of the use of nitrous oxide gas as an anesthetic.

TABLE OF OPERATIONS

Disease or Injury	No. of Cases	Avg. Age	Duration Hours	Deaths	REMARKS
Appendicitis, Acute	96	24	36	0	About 20% were drained.
Appendicitis, Perforative	26	24	60	5	Average duration before operation in cases of death was 79 hours.
Appendicitis, Abscess	22	30	226	1	Death due to breaking down of protective wall from undue manipulations.
Tubal Pregnancy, Ruptured	9	28	20	1	Case of death was moribund at operation.
Hernia, Strangulated	8	46	30	0	One case of large umbilical hernia in obese patient was of special interest.
Pyosalpinx, Ruptured	7	35	36	0	
Intestinal Obstruction	6	28	40	0	One case girl, age 13, was operated one year previous for torsion of pedicle of ovarian cyst, then had volvulus requiring resection of three feet of gangrenous intestines.
Intestines, Gunshot Wounds of,	5	35	14	2	Two cases of death were moribund at operation, one case of recovery required resection of five feet of intestines.
Acute Surgical Kidney	5	19	72	0	
Ovarian Cyst, Torsion of Pedicle	3	25	120	1	Case of death had been treated two weeks for typhoid fever.
Caesarean Section	3	33	.....	1	One death from shock.
Rupture of Uterus	3	28	14	2	Case of recovery was a spontaneous rupture and without apparent cause; cases of death were moribund and due to improper use of forceps, and in one case intestines were detached from the mesentery, requiring resection of twelve feet.
Liver, Gunshot Wounds of	2	30	14	0	
Ulcer of Duodenum, Rupture of	1	18	12	0	
Typhoid Perforations	1	16	36	1	Death 10th day from septic pneumonia.
Diverticulitis, Meckel's	1	12	48	0	Polypus of umbilicus had been removed in infancy.
Stomach, Traumatic Rupture of	1	8	12	1	Moribund at operation.
Cholecystitis Acute	1	30	36	0	Diagnosed appendicitis phlebitis in convalescence.
Operations for Acute Abdomen	200	.....	.....	15	Mortality 7%—6 cases were moribund and two confessedly hopeless at operation.
Operations for Chronic Abdomen	450	.....	.....	6	Mortality 1.3%.
Operations, Miscellaneous	1110	.....	.....	8	Mortality .7%.
Grand Total	1760	.....	.....	29	Mortality 1.5%.

DISCUSSION OF DR. HARBIN'S PAPER.

DR. O. H. WEAVER, Macon: As Dr. Harbin has already stated, the most important thing in connection with acute abdomen is prompt diagnosis, and while he has entered into practically all the classical signs of diagnosis, there was one point that I wanted to speak of in connection with postponing operation, and that is the matter of the leukocyte count. While I appreciate the importance of blood examination and leukocyte count in this type of work, at the same time, I have known of instances where the surgeon was rather inclined to lay too much stress on the leukocyte count, either as to the total count or as to the differential in the matter of determining when to operate. It has been my experience—and I have never had reason to regret taking that position—that after we diagnose an acute abdomen, we should operate at once, unless there is some good reason for not operating, some reason other than the leukocyte count. In other words, when we diagnose acute appendicitis or any other condition of that kind, why do you wait at all? After the diagnosis is made I believe the interest of the patient is best conserved by immediate operation.

As far as using the leukocyte count as a guide as to whether I shall operate today or wait until tomorrow, I do not believe it is worth while; in fact, I believe it is sometimes misleading. As we all know, if the resistance of the patient is not of a sufficient degree, that may influence the blood picture, but you might have a low blood count due to lack of resistance of the patient, and you might think it was due to lack of disturbance, and it would be misleading.

The next feature was that of drainage. I agree with Dr. Harbin that when in doubt it is certainly better to drain, because a drain can do no great harm even if it is not needed. Dr. Murphy stated that it took him twenty-five years to learn to keep gauze out of the belly, and if you pack a lot of gauze into the abdomen, you will likely have bad results, but with a simple split rubber drain with a gauze wick in the drain, so that the gauze does not come in contact with the peritoneal coat, I do not see what harm can come. As to the time of removing the drain, I believe that where we have pus and drainage is unquestionably indicated, we are often

prone to remove the drain too early. I believe it is better to leave it in a number of days, because by the fourth or fifth day probably the drain becomes loosened and it is easy to remove without damage to the parts.

DR. R. C. WOODARD, Adel: I want to endorse the paper of Dr. Harbin, and I really think, gentlemen, that this is one of the most able papers that we will have during this session. I also want to endorse the discussion of Dr. Weaver. While there are some men in the practice of medicine who will defer operations for appendicitis, no less an authority than the late Dr. Murphy said to operate as quick as you make your diagnosis. I want to appeal to all men in general practice that whenever you have a case of appendicitis to operate, to do it now, because it will finally kill the patient if you let it alone.

I have a question that I want to ask Dr. Harbin. In view of the fact that he has such a low mortality, I would like to know what per cent of the cases in this series were pus cases.

DR. A. J. MOONEY, Statesboro: In this paper there are four high lights, in my opinion, that show from what direction their success has come. First, in early diagnosis; second, in drainage; third, in combating shock; fourth, in seeing after the patient. Now, as to early diagnosis in appendicitis, I make this a rule myself. Given the symptoms of acute appendicitis I pay absolutely no attention to blood count. I have seen a gangrenous appendix with a blood count of 11,000. I make this a rule, that if I have a high blood count, I operate; if I have a low blood count, I operate.

In the question of drainage I had a little experience in that line the other day. None of us as surgeons have ever been satisfied with draining pus in the abdomen up hill through a rubber tube. It looks as though it is not scientific, but it is easy and most valuable. I had a case the other day where I drained an abscessed appendix through the rectum. It was a man that I had operated two weeks before, who had a perforated appendix, and I put in a tube through the right rectus incision, and he made a very beautiful recovery up until the twelfth day, when I took out the tube. About the thirteenth day his temperature commenced to rise and he developed a swelling that looked like a full bladder. I felt sure that he had an accumu-

lation of pus there, so I put him on the table and opened into the Douglas cul-de-sac and drained it out through the rectum. The man recovered. What is to keep us in these appendicitis cases with a ruptured appendix and the abdomen filled with foul smelling pus from making a good long drain incision right through the Douglas cul-de-sac and take a pair of stomach clamps and with a good heavy rubber tube pass it into the rectum. You can close up the skin incision if you care to, but I feel sure that it would drain this pus in a way that seems natural.

DR. GEORGE R. WHITE, Savannah: I want to back up what Dr. Harbin says about the blood count. I believe we cannot disregard it. Occasionally we have a patient brought in with typhoid fever, with every classical symptoms of appendicitis—everything except the blood count. We have several cases to our credit where we have not operated in typhoid fever when we had a good opportunity to do it; and I know of cases where a normal appendix was removed in a case of typhoid fever. The thing I want to disagree with Dr. Harbin is on the question of drainage. I believe when in doubt we should not drain. Another place where I would disagree with Dr. Harbin is in the use of salt water. I believe a sick person needs a lot of water, but he does not need any more salt. We use plain water only. Among very many good things that the Doctor brought out was this, that if we are going to get good results in our surgical operations, we must get the patient in time. If the doctors in his community send their patients into the hospital in time he will get good results, if they delay he will get bad results.

Dr. W. B. Hardman (Commerce): In one of his late papers the great John B. Murphy said that a great many people think that probably the last word has been spoken in regard to appendicitis, but the country still needs an awakening along that line. He says that 10 per cent of the cases of acute appendicitis that come to the hospitals in the United States die, all of which could be saved by an early operation, or practically all of them. The mortality rate of the last report of the Mayo clinic was only about 3 per cent of the accurate suppurating appendicitis cases. But I want to call attention to one thing: I think that we have blamed too often the doctors of the country for not making an early diagno-

sis of appendicitis and bringing their patients to a surgeon or to some one who can do an appendectomy. Very often in the country it is the patient's fault. It is no uncommon matter to have a patient call his doctor first after he has had appendicitis for 48 hours, thinking he had colic, or had eaten something, or had this fearful disease we hear so much about and see so little, viz.—acute indigestion. Let us not blame it all on the attending physician, but let us try to educate the laity. The time is coming more and more every year when the regular medical practitioner will make a diagnosis of appendicitis and promptly call a surgeon, because we know that the risk of operating is very much smaller than leaving them alone.

Dr. Deaver, in making a speech at the meeting in memory of Dr. John B. Murphy, said that he once asked him: "Upon what do you base your success in operating for appendicitis?" What agent has served you best?" And he said he was glad to hear Dr. Murphy say, "Upon the proper and successful use of gauze." And Dr. Deaver said, "And I heartily agree with him."

I agree with Dr. Harbin that it is a nice thing to syphon off the pus in the abdomen, but I think very careful use of gauze packing in your operations will serve you very well, not only during the operation, but afterwards, if you use a cigarette drain or a double drain.

Sometimes peculiar hernias will be hard to differentiate from acute appendicitis. I had two of these—one an obdurator and another which I want to report—a complete invagination of the lower loop of the ilium in the post-peritoneal wall, passing in somewhere not far from the site of the iliac artery, scooping in and out. I operated in about 24 hours and found a very peculiar condition. In wielding an axe this man had somehow slipped this loop of the ilium right through the posterior peritoneal wall and out again. I took particular pains to show that to the attending physicians. The patient unfortunately died.

I certainly thank Dr. Harbin for his paper and I think the time has not come to cease talking about early diagnosis of the acute abdomen, because nine times out of ten it means the salvation of the patient.

Dr. A. D. Little (Thomasville): There seems to be rather a difference of opinion about the leukocyte count. I would like to

say that just a short time ago a young fellow, who was certainly well posted in surgery, had several years at Johns Hopkins, and then at the Roosevelt, was on a visit to his family in my town. He had a friend who had an acute abdomen and he carried him to a hospital and began to make a blood count. He counted the blood and kept on counting the blood, and in the meantime the appendix abscessed and burst, and it was only by the most heroic methods that they finally pulled this man through. This young fellow told me that the blood count did not indicate an operation, in his judgment, and asked me, "What in the world would you have done about it?" I very promptly told him that I would have called in most any little "cracker" doctor from my town and let him make a diagnosis. We can not rely upon any one thing in diagnosis. We must use all the methods we have. We must take everything into consideration and not depend on any one thing in forming our decision.

Dr. C. I. Bryans (Augusta): In regard to the leukocyte count, I do not believe that it is worth anything. It has been misleading to me more times than it has been helpful. I do not think we should depend upon the leukocyte count in any case. I have seen cases where we would expect at the time of operation that this would certainly be a case where we would have a high leukocyte count, when the record would show that the leukocyte count was practically normal.

Another thing is the drainage. What the Doctor said about drainage is good, but as to the kind of drainage I do not agree with him. If we are going to use a rubber tube in draining the abdomen, I can not see any need in blocking up that rubber tube with gauze. We have gotten much better results with an open rubber tube than with one stopped up with gauze.

Another point is as to the blood transfusion. It is recognized at the present time that blood transfusion is our best method of combating shock. But it is a very dangerous thing to use a donor for transfusion whose blood grouping is different from that of the recipient. It is a simple thing, not requiring more than ten to fifteen minutes, to test the prospective donor's blood and determine whether or not the donor and recipient belong to the same agglutination group. If they do not, it is a dangerous thing to trans-

fuse with a donor whose blood is not agglutinated to the recipient's blood. The Doctor makes the point of using as the donor a member of the same family. That in some instances is all right, but it does not hold good in every case by any means. It is always safe to use the mother as the donor in the transfusion of blood. The mother and child have the same grouping. In other members of the family that will not hold good, and you will sometimes get fatal results by using the wrong donor.

One of the points I merely want to mention is that if ever I have acute abdomen, God deliver me from a doctor who will drain it through my rectum!

Dr. T. J. McArthur (Cordele): We all know as medical men, especially those who do surgery, the importance of operating early; but in considering the time for operation the question is: What will you do with those cases who come late? What will you do with the case that is a week old, when you feel reasonably certain that the only chance for that individual for life is operation, and that chance is very slim? What are you going to do, take care of your reputation and tell him he should have come sooner, or give him a long chance for getting well? It is a question that comes home to us as surgeons who are operating in the country and small towns. These men who are in large hospitals, remote from rural districts, where they operate hundreds and thousands of cases of appendicitis, necessarily have a smaller mortality rate than some other surgeons. I would like to ask Dr. Harbin to state something of the percentage of pus cases in this number he has mentioned.

Dr. J. M. Anderson (Columbus): I wish to mention the importance of early diagnosis, and have a laboratory man to do it. I do absolutely no laboratory work; I have a laboratory man I can rely on. As to blood count, my laboratory man tells me that if you do get a case in the beginning, an acute case, you always have an increased leukocytosis, but in the course of a few days the leukocytosis will diminish. Another point is the drainage. Whenever I operate they hand me a drainage tube without asking any questions. I drain them all. It does not do any harm and it might save a life.

Dr. L. S. Hardin (Atlanta): In seventeen years I have seen a great many deaths from

delayed operations for appendicitis; but I have never seen a case that was operated during the first twelve hours that died. Who is responsible? I think it is our duty to protect our patients in every respect, and if we see them as soon as they have these attacks, it is our duty to tell them what is wrong. Then we do not have to take all the responsibility of every patient.

As to drainage, if you put in a cigarette drain, or a McBurney, you will have an abscess. To overcome that I put in a cigarette drain in the middle of a rubber tube, with the end of it serrated. That only goes through the abdominal wall. That is to maintain the opening in the muscle. A true McBurney itself I do not believe in, because if you put a tube into the abdomen, you will have a fistula. During the last two years, with every one of my patients I turned them over well on the left side or flat on the abdomen, keeping the dressing moist with saline and listerine. That keeps the dressing sweet and gravity does the remainder. The mortality of advanced cases is reduced by 75 per cent by using a local anaesthetic or a local anaesthetic and gas.

Dr. W. P. Harbin (closing): I want to thank the gentlemen for their discussion of this paper, and in reply to my fellow physicians here about our death rate from acute appendicitis, I want to say we had 96 cases of acute appendicitis, the average age 24 years, duration of disease 36 hours, with no deaths. That is, in all the acute cases of appendicitis that did not have a perforation and who had been sick for 36 hours we had no mortality whatever. In 26 cases of acute appendicitis with perforation, average duration of illness 60 hours, we had 5 deaths. We had 22 abscess cases, average duration of disease 226 hours, with one death. These are taken from our hospital records. About 20 per cent of our acute appendicitis cases we drain.

I can not touch on all the things that have been discussed here, but I would like to say one thing about the leukocyte count, and that is this, that the leukocyte count is an aid. If you are sure by rigidity and other symptoms that you have acute appendicitis, you would operate whether you had a leukocytosis or not. About six weeks ago I saw a very acute case of appendicitis that had been sick for four days. He was a very sick man and was brought into the hospital on a stretcher. After he came into the

hospital his pain quit entirely, and he had comparatively little rigidity in his abdomen, and his leukocyte count was normal. But on opening the abdomen we found an abscess. That was the only case where we have found pus in the abdomen with a normal leukocyte count.

In reply to Dr. Hardman's statement that very often the reason the operation is delayed is because people have not been educated to early operations. I would say that has not been my experience in recent years. Formerly they said, we will not have an operation until the last thing; now they invariably say go ahead.

Dr. Hardman: Dr. Harbin misunderstood me. Very often they do not call in the doctor until twenty-four to forty-eight hours after. They ought to be educated to send for the doctor and not take oil and patent medicines.

Dr. Harbin: As to whether to drain or not to drain, I think that is to be decided by the surgeon's good judgment at the time he meets the condition. I thank you for your discussion.

TRAUMATIC RUPTURE OF VISCERA WITHOUT EXTERNAL WOUND.*

Frank K. Boland, F.A.C.S., Emory University.

We may compare the traumatic rupture of viscera without external wound to simple, or closed fracture of bone, whereas such a rupture with an external or penetrating wound may be compared to compound, or open, fracture. The fear of "internal injuries" resulting from accidents showing little or no external wound is a very common one in the minds of the laity, and usually such fears prove unwarranted. It is wise to remember, however, the possibility of serious, or even fatal, damage being done to internal organs through an intact skin. Such injuries sometimes occur when least expected.

The cranial and thoracic viscera may be affected in this manner, but the abdominal viscera are involved far more frequently. Of the latter, the kidneys, stomach and intestines are most commonly injured, though

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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many cases of rupture of the liver, bladder and spleen have been recorded. In this paper only such cases as have occurred in the experience of the writer will be mentioned. These include one case of ruptured liver, in which the kidney no doubt also was lacerated, two other cases of ruptured kidneys, and one case of ruptured jejunum.

In the first case the victim was riding in an automobile when the tongue of a two-horse wagon struck him a violent blow just over the liver, and then glanced off. There was considerable skin contusion, though no penetration, and the patient, a man of 29, was profoundly shocked for the first two or three hours. When seen by the writer 12 hours after the accident, the general condition of the patient was surprisingly good, the pulse, respiration and temperature being normal. There were some abdominal pain and tenderness, and rigidity of the right rectus, always a significant sign of rupture. The patient had not voided urine, and catheterization showed considerable blood, which he continued to pass for the remaining 48 hours that he lived. Laparotomy was done through the right rectus, and the abdominal cavity was found full of blood clots which came from a large rent on the posterior surface of the liver. Excepting a small tear in the mesocolon, no other demonstrable wound was present. The kidney injury probably consisted of a laceration transmitted from the blow on the anterior abdominal wall. The wound in the liver could not be stitched, and was packed, and the abdominal cavity drained. The patient presented no further signs of hemorrhage, and did not develop peritonitis. He began vomiting soon after the operation, and his abdomen became enormously distended, and it was impossible by any means to obtain a bowel movement. In the opinion of the writer, death was due to intestinal paresis from shock to the sympathetic nerves.

In 40 per cent of subentaneous injuries of abdominal viscera the kidney is the organ affected. Additional interest is given the kidney over wounds of other viscera in our ability to detect the lesion through hematuria, which occurs in 80 per cent of cases. We have no such reliable guide in the diagnosis of injuries of other organs. Other possible sources of the blood in urine must

be eliminated, however, before it can be determined to come from the kidney.

The two other cases of subparietal rupture of the kidneys, to which reference has been made, have been reported, and such injuries discussed, in previous papers by the author.* An interesting case seen recently is a ruptured jejunum.

The patient was a 17-year-old boy in perfect health, who was injured in a high school football game. While holding his arms above his head attempting to receive a forward pass, the knee of another player struck him in the abdomen. He vomited soon after the blow and was carried to the sideline, but felt better a few minutes later and asked to be allowed to re-enter the game. He was taken home, though he did not appear to be seriously hurt. He vomited twice during the night. The attending physician stated that the pulse did not go above 118, and indeed it was not reported any higher than this at the time prior to the operation, which would indicate that the injury did not cause surgical shock. The degree of injury and the degree of shock do not bear a constant proportion to each other. The temperature rose to 101 a few hours after the accident, but the following morning was 99.1-2. By this time, however, the patient had developed considerable rigidity of the upper abdomen, and it was this symptom, more than any other, his physician declared, which caused him to fear a rupture of some viscus.

When seen 28 hours after the injury, the young man did not look very sick, though his expression was somewhat anxious. There was no abrasion of the skin over the abdomen, but the abdominal muscles were distinctly rigid, especially in the upper half, and pressure elicited considerable soreness here. The patient was not suffering greatly, and had had one hypodermic of morphine. His pulse was good, 112, temperature 100.1-2, but his leukocyte count was 25,000. Altogether, he had vomited about five times since he was hurt, and the last vomitus was dark, and had the odor of small intestinal contents. His bowels had acted once, and he had nothing by mouth except water. There was slight tympanites all over the abdomen, and the liver dulness could not be made out. A diagnosis of intestinal rupture was made, but only a small opening was expected.

Upon incising the peritoneum in the midline above the umbilicus, there was no escape of gas, but considerable bloody serum was found, though there was no odor and no pus. Everywhere the peritoneum was injected, indicating the peritonitis which accounted for the high leukocyte count. A few small blood clots were found, but evidently no large vessel had been torn. Exploration soon showed the cause of the trouble to be in the beginning of the jejunum at the point where gastro-jejunostomy is performed. The gut was transversely torn two-thirds of its circumference, leaving practically only the mesentery holding it together. The wound was now gaping open, the mucous membrane being much swollen and pouting so that the rupture looked big enough to hold a baseball.

The protruding mucous membrane was trimmed off and the opening was closed by a continuous layer of through and through catgut, and a continuous linen Lembert suture. As much serum and blood as was possible was wiped out, and the wound was closed with a cigarette drain. A rubber tube drain was placed in the pelvis and passed through a stab opening in the lower abdominal wall. The head of the patient's bed was raised and he was given continuous saline and soda proctoclysis for 72 hours. Water was given by mouth after the first 24 hours, and liquid food was begun on the fourth day. The case progressed with no more disturbance than usually follows the ordinary appendectomy with drainage, and the boy was able to leave the hospital, apparently well, in three weeks.

The fact that this patient seemed only comparatively ill with such a serious injury is not unusual. He felt so well after a 40-mile ride on the train to Atlanta that he did not wish to be taken to the hospital in an ambulance, but desired to walk out of the train and ride in a cab. Cases have been reported in patients who continued at their work for several hours after receiving such an injury. Bonanome, in England, records an instance where a man walked two miles after having his ileum ruptured. Delay in the appearance of symptoms is another feature which is apt to mislead one in these cases. Holland's patient had no symptoms for 24 hours, although the jejunum was ruptured.

The cause of the lesion in the case reported here undoubtedly was due to compression of the gut against the vertebral column, which is given as a common cause in such cases. It is not always necessary for the gut to be lying directly at the point where the blow is inflicted; rupture may be due to indirect violence, as in fractures of bones.

Figures as to the outcome of these cases in different periods of medical history tell how abdominal surgery has advanced. Curtis collected 116 cases which occurred before 1887. None of these were operated upon and every patient died. Gage collected 85 cases between 1887 and 1902; 45 were not operated upon and every one died; 40 were operated upon and 17 recovered. Eisendrath, still more recently, collected 40 cases operated upon: 19 recovered and 21 died, a mortality of 52.5 per cent. The mortality of cases not operated upon is, according to Eisendrath, at least 93 per cent. According to Senn, in operations done within four hours the mortality is 15.2 per cent; in those done between five and eight hours it is 44.4 per cent; in those done between nine and twelve hours it is 63.6 per cent, and in those done later it is 70 per cent.

The case here detailed falls in the last class, since it was not operated upon until 30 hours after the accident, and recovery is attributed to several factors: First, the patient was a well-nourished young man in prime condition and with no history of antecedent disease. Second, acting under the instruction of a wise football coach, he went into the game with but very little, if any, food in his stomach and intestines. He had had only a sandwich and a glass of milk for lunch, and these had been eaten four hours before the game started. For the same reason it is well known that gunshot wounds of the abdomen in military practice do better than those in civil practice. The alimentary canals of soldiers during war contain less food than those of civilians not in war, and hence there is less leakage into the peritoneum.

Third, the upper part of the intestinal canal contains fewer and less virulent bacteria than the lower part. Had this perforation taken place in the ileum or the colon instead of in the jejunum, no doubt the result would have been different. Fourth, the intestines

were not handled unnecessarily in searching for other wounds, and the abdominal cavity was not irrigated with anything. The less one's judgment will allow him to handle and expose the abdominal viscera the more shock is minimized. However, as many as six perforations have resulted from such an injury as this, and, of course, to repair five of them and fail to discover the sixth one would probably prove fatal to the patient. With anything like septic material in the peritoneum, the writer gave up flushing the cavity long ago. We have been taught that this abstinence by most men has been largely responsible for improved results in the treatment of suppurative peritonitis in recent years. Yet such a step is still advocated by no less an authority than Moynihan. Mopping and wiping out as much foreign matter as possible seems safer, as irrigation further extends infection.

After all, the important point is the diagnosis, and the early diagnosis. Has the patient a ruptured intestine or is he only suffering from shock with possibly a bruised or contused intestine? Profound shock may be produced without actual rupture of an organ, due probably to concussion of some sympathetic center. So shock alone must not constitute the indication for laparotomy. Indeed, as a rule, shock is a contraindication for operative interference, in any condition. "But if the abdomen soon becomes rigid and tender, if the rigidity steadily increases and affects the whole abdominal wall, if the vomiting is repeated at short intervals, if the patient, by his facial expression, conveys the impression of serious illness—then an exploratory incision is not only justified, but is imperative." In those cases which fail to present the typical picture, and they are always many, we must in the end fall back upon surgical judgment, a gift of study and experience, which is more valuable and rarer than the ability to operate.

DISCUSSION OF DR. BOLAND'S PAPER.

Dr. H. S. Monroe (Columbus): I am very much interested in this paper of Dr. Boland, but I do not feel competent to discuss it, because I have never had a case of ruptured viscera from injury. I recall a num-

ber of severe abdominal injuries which I have had come under my care, in which I suspected a possible injury to some internal organs, but after watching them carefully they have all cleared up and subsided without any evidence of rupture. I recall one case particularly, a young boy about 11 years old, who was run over by a heavy automobile. It came across his upper abdomen; the boy was severely shocked and vomited a considerable amount of blood, complaining of a great deal of pain and discomfort. I think very probably in that case the stomach was ruptured. But after keeping him under close observation for several days he developed no symptoms and his condition gradually improved. His liver was badly bruised, and later he developed a traumatic pneumonia in one lung. Since hearing this paper I recall two cases in which the kidneys were injured—not ruptured. I remember one was a lady who was thrown forward in a street car, striking across her side. I remember she passed a large amount of blood and was probably seven or eight months in recovering from this injury. It is very probable she had a rupture of the kidney, although it was not operated and the symptoms gradually cleared up. In that particular case it probably would have been wise to have performed an operation of the kidney. I did not realize that the kidney was so easily ruptured, but following these injuries in which we have blood come from the kidney it is, of course, important to think about this rupture and possibly in some cases the patient would stand a much better chance with an operation than without it. One feature I was struck with was the mildness of the symptoms of the cases of the rupture of the liver or jejunum. It is hard to understand how a boy with such a rupture could be feeling so well and show so little symptoms of shock: but, of course, the shock from injury to the upper intestine is much less than it would be from the lower part of the bowels. It is a common saying among the laity that if a person is badly injured around the chest or abdomen, we always watch for some internal injury, and seem to realize that there is always a possibility for some serious injury that will show up later, and I think every physician who has

a patient that has been severely injured about the abdomen or chest should not offer a favorable prognosis until the ease is watched at least 24 hours.

Dr. O. H. Weaver (Macon): There is a feature of Dr. Boland's paper that I wish to speak of, a point illustrated by two cases that I had under my observation. The first case proved to be a rupture of the small intestine by the passage of a wagon across the abdomen of a 6-year-old child. The father of this child was a physician himself, and he saw the child immediately after the injury, and I saw it within an hour. There was primary vomiting and some tenderness, and the child was complaining of frequent desire to urinate—symptoms rather suggesting some injury to the bladder, but catheterization proved that to be not true; there was no blood and nothing abnormal. This child's father stayed with the child all the time. There was apparently no shock after a few hours, and from the general symptoms, and the physical signs the child was not seriously hurt. I saw the child a couple of times during the day and there had been no further development suggestive of any serious injuries. Later in the night the father telephoned me and said the child had begun to vomit and was complaining of a good deal more pain. I immediately went back and the child at that time had begun to show some rigidity in the abdomen. We immediately carried the child to a hospital and operated and found the small intestine torn in two—the transverse tear practically through to the mesentery. There was an anastomosis, and the child recovered.

Another case, where I observed a picture that tempted me to operate was a case which proved to my own satisfaction was not a rupture. A little fellow fell off a fence on his abdomen, and when I saw him he was in as profound shock as any patient I ever saw. He was very pale, the pulse weak, the abdomen distended, and he was vomiting. As soon as they got their regular family physician he came out, and while seeming to appreciate the serious condition of the child, he suggested waiting rather than immediate operative procedure. That child stayed in that condition of shock with a tense, rigid abdomen, vomiting off and on, up until 10 o'clock that night—six hours after the injury, when the symptoms

gradually began to improve and the next day the child was practically well. The question is, what are you going to be guided by? The only thing that I could suggest would be careful watching.

TWELFTH DISTRICT

E. T. Coleman, M.D., Councillor.

Dr. J. H. Chandler, of Swainsboro, county physician for Emanuel County, and one of the leading physicians of this section, was recently operated upon for appendicitis at the University Hospital, Augusta.

Dr. R. E. Graham, of Stillmore, and Dr. T. E. Blackburn, of Swainsboro, have joined the Medical Reserve Corps. They are both from Emanuel County and members of the Emanuel County Medical Society.

Dr. E. A. Chanee, of Garfield, died at his home at that place, on August 13, 1917, of a complication of diseases. He was one of the most successful men in this section of the state, as a physician, druggist and business man. He was president of the Emanuel County Medical Society for 1916. He was 47 years of age.

The Twelfth District Medical Society held their midsummer meeting at Ailey, Mt. Vernon, in July, 1917, with Dr. C. R. Riner, of Summit, in the chair as president, and Dr. T. C. Thompson, of Vidalia, as secretary. There were a number of clinical cases of interest presented, and a number of valuable papers read and discussed. President E. E. Murphy, Ex-President W. W. Pilcher, and Ex-President J. G. Dean, Dr. George R. White and Dr. J. T. Maxwell were present as visitors. A bountiful banquet was furnished at night, at which Drs. Murphy, Pilcher and Dean, made patriotic addresses on medical preparedness. Dr. J. E. New, of Dexter, was elected president for the ensuing year, and Dr. T. C. Thompson re-elected secretary. Swainsboro was selected as the next place of meeting.

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NEWS: Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

GEORGIA MEDICAL OFFICERS.

The following physicians have been recommended for commissions in the Medical Officers Reserve Corps. This list is complete up to August 8th. Since that date a number of other men have been recommended:

John Anderson White, Albany; Hershel Atticus Smith, Americus; Walter Arthur Miller, Arabi; Cyrus Koskilusko Sharp, Arlington; Harry R. McKellar, Athens; Harold Irwin Reynolds, Athens; John Herbert Swafford, Athens; Henry Daniel Coffee, Auburn; Wm. Nevin Adkins, Atlanta; Wayne Starr Aiken, Atlanta; Thomas Blake Armstrong, Atlanta; Edgar Garrison Ballenger, Atlanta; Stephen Trent Barrett, Atlanta; Edward Bates Block, Atlanta; Frank Kells Boland, Atlanta; Montague Laffitte Boyd, Atlanta; Walpole Cheek Brewer, Atlanta;

Stephen Treadwell Brown, Atlanta; Orvid Bern Bush, Atlanta; Jesse Lee Byrd, Atlanta; James Taylor Calloway, Atlanta; James LeRoy Campbell, Atlanta; Edgar DeWitt Chanks, Atlanta; John Hightower Cooper, Atlanta; Zachary Stuart Cowan, Atlanta; Leo Paul Daly, Atlanta; Richard Randolph Daly, Atlanta; Edward Campbell Davis, Atlanta; John F. Denton, Atlanta; John Sebastian Dorr, Atlanta; Henry Rutledge Donaldson, Atlanta; Omar Franklin Elder, Atlanta; John Howard Hall, Atlanta; Thomas Hightower Hancock, Atlanta; Charles Hernon Haralson, Atlanta; Stephen T. Harris, Atlanta; William Andrew Jackson, Atlanta; Lewis Jasper Keeling, Atlanta; Ernest Victor Keller, Atlanta; John Payson Kennedy, Atlanta; Claud Thomas Key, Atlanta; Charles Edward Lawrence, Atlanta; Hugh Montgomery Lokey, Atlanta; Gilbert Fabian Long, Atlanta; Rankin Robert Lowery, Atlanta; James Arren McAllister, Atlanta; James Calhoun McDougall, Atlanta; Lewellyn Hudson Muse, Atlanta; George McCallum Niles, Atlanta; Richard Thomas O'Neil, Atlanta; Mark Pearson Penticost, Atlanta; Weldon Edwards Person, Atlanta; Charles Mallory Remson, Atlanta; Edward Dugan Richardson, Atlanta; James William Roberts, Atlanta; John Augustus Roddy, Atlanta; Herbert Jerome Rosenberg, Atlanta; Dunbar Roy, Atlanta; James Robert Smith, Atlanta; Thomas Harding Smith, Atlanta; Cecil Stockard, Atlanta; Northern Orr Tribble, Atlanta; Wilborn Arthur Upchurch, Atlanta; Charles Edward Waits, Atlanta; John Wallace, Atlanta; Dean F. Winn, Atlanta; Evans B. Wood, Atlanta; Louis Tompkins Wright (colored), Atlanta; Lucius Featherstone Wright, Atlanta; Hinton James Baker, Augusta; Thomas Davies Coleman, Augusta; Thomas Lyles Davis, Augusta; Jesse Ansley Griffin, Augusta; Ernest Robert Harris, Augusta; George Turner Horne, Augusta; William Gordon Hunter, Augusta; Nathaniel Hawthorne Lang, Augusta; Samuel Joseph Lewis, Augusta; William Clifton Lyle, Augusta; Henry Holcombe Malone, Augusta; Francis Xavier Mulherin, Augusta; Eugene E. Murphey, Augusta; Theodore E. Oertel, Augusta; Joseph Righton Robertson, Augusta; Henry Wm. Shaw, Augusta; David Marion Silver, Augusta; George A. Traylor, Augusta; Walter Whitney, Augusta; Everard Wilcox, Augusta; Joseph Eugene Mercer, Baxley; John Wesley Oden, Blackshear; Thomas Ellsworth Oden, Blackshear; Philip

Hamilton Fitzgerald, Blakely; Osee Fulton Keen, Brewton; Robert Harley McDonald, Bullochville; Earl Thornton Newsom, Camilla; Charles Leon Roles, Camilla; Benjamin Franklin Bond, Canon; John Hudson Terrell, Jr., Canon; William Lloyd Aycock, Carrollton; Robert Ellis Foster, Carrollton; Ira Clifton Hinkle Garst, Carrollton; Henry M. Hall, Cedartown; Horace Frank Stilltur, Chickamauga; Herbert Eugene Simrell, Clarks Summit; Buford Crosby Bird, Colquitt; Jesse Monroe Anderson, Columbus; Roland Lee Brooks, Columbus; A. Nathan Dykes, Columbus; Roscoe Felix Johnson, Columbus; Bert Tillery, Columbus; Whitfield Walker Crook, Cuthbert; Frank Willingham Rogers, Dakota; James Roscoe Sams, Dearing; James Fling Pitman, Decatur; Gordon Burns, Douglas; John R. Smith, Douglas; George Hayne Turner, Douglasville; Charles Augustus Hodges, Dublin; Landrum J. Page, Dublin; Ferdinand Herman, Eastman; Richmond R. Holt, Eatonton; Charles Sidney Smith, Edison; James Franklin Arthur, Enigma; Charles Harry Harvey, Fairburn; John Walter McElroy, Fitzgerald; Adrien Dallas Williams, Folkston; Madison H. Bowman, Atlanta; John Fletcher Denton, Atlanta; Elliott Boyd, Fort Oglethorpe; Joseph L. Sanford, Fort Oglethorpe; Harry Rubin, Fort Screven; Horace Edmund Grow, Gainesville; Williams Phelps Ellis, Gay; Albert Byron Martin, Harlem; James Malone Bryant, Hartsfield; Glenn Mullins, Hiram; Roy Augustus Gunter, Jackson; Jesse Hope Campbell, Jefferson; Robert Mitchell Coulter, LaFayette; George William Dupree, Lindale; Kelso Adair Carroll, Lizella; John Ransom Lewis, Louisville; Hilton Walton, Lumpkin; Ben Hill Clifton, Lyons; Melton Downie Council, Macon; James Allen Etheridge, Macon; John Parkham Holmes, Macon; George Lawson Johnson, Macon; George Yellott Massenburg, Macon; Linton Cobb McAfee, Macon; Rupert Hope Stovall, Macon; Wesley Carstarphen Thomas, Macon; Fred Leland Webb, Macon; William Augustus Williams, Macon; Oscar Wilson DeVaughn, Manchester; Leslie Lenton Blair, Marietta; William Franklin Jenkins, Midland; Edwin Whitaker Allen, Milledgeville; Wiles Homer Allen, Milledgeville; William A. Hagins, Milledgeville; Young Allen Little, Milledgeville; Mark Edward Perkins, Millen; Homer G. Lightner, Montezuma; John Felton Burkhalter, Morven; James Kemp McClintic,

Monroe; William Gordon Herrington, Nunez; William S. Armour, Jr., Ocilla; Marcus Lafayette Webb, Omega; Gordon Sykes Sumner, Paulan; John Miller Beggs, Pavo; Elmer E. Mansfield, Pavo; Oma Ernest Herndon, Powelton; Lawrence Augustus Felder, Quitman; Leighton Alexander Smith, Quitman; Charles L. Kennon, Rochelle; Burton Paul Bradley, Rome; Joseph Harrison Mull, Rome; George Barker Smith, Rome; David Pearce Belcher, Sale City; George S. McCarty, Sandersville; Henry Louzoe Akridge, George Lewis Fuquay, Savannah; William Augustus Harris (colored), Savannah; Needham Lawton Kirkland, Savannah; George Herrmann Lang, Savannah; Joseph Dodd Lyle, Savannah; Charles Clayton Middleton (colored), Savannah; William B. Orear, Savannah; Harry Rubin, Savannah; Edward B. Sires, Savannah; DeLamar Turner, Savannah; Harry Lee Upshaw, Social Circle; Richard Binion, Sparta; Lucius Pierce Farmer, Spread; Rufus Elliot Graham, Stillmore; DeSaussure Dugas Smith, Stillmore; Thomas Eugene Blackburn, Swainsboro; John Colvin Coll, Sylvania; Walter Kenneth Stewart, Sylvester; Grady Lumsden Carter, Talbotton; Thomas Ennis Pugh, Talbotton; John Riley Turner, Temple; William W. Jarrell, Thomasville; Henry McIntosh Moore, Thomasville; Austin James Kemp, Tifton; Charlton Cash Whittle, Tifton; Egbert Merridy Townsend, Tifton; Carl Hugh Verner, Toccoa; Frank Bird, Valdosta; Alton Walker Davis, Warrenton; Orlando Samuel Wood, Washington; James Jules Beaton, Waycross; Benjamin Harty Minchew, Waycross; Robert Carroll Walker, Waycross; Heber Jones Morton, Waynesboro; Henry T. Corbitt, Willacoochee; Searle Bowley Gillespie, Willacoochee; Lowndes Walton Shaw, Willacoochee; John William Bradley, Woodstock; Spencer Atkinson Kirkland, Zirkle.

What shall we do in regard to this? Shall we sit supinely and watch this annual procession of our Georgia boys and girls wending their way along dark pathways to our State Academy for the Blind, or rather shall we not en masse put ourselves on record for the early adoption of a law and regulations which will gradually reduce blindness from this cause in Georgia, as it is doing in other states? A movement looking toward legislation of this nature has already achieved considerable headway.

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No. 5

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SUBPARIETAL INJURIES OF THE INTESTINES AND KIDNEY—REPORT OF CASES.*

C. W. Roberts, M.D., Atlanta, Instructor in Surgery, Emory University.

When it has been your good fortune to correctly interpret the symptoms following an injury to the abdominal wall or renal region and you have backed up your convictions with the courage necessary to secure adequate investigation of such an injury, which, upon final analysis, reveals deep-seated, mortal wounds of viscera, the subject of subparietal injuries will take on new interest. As an acquisition from the day of medicine when our illustrious coworkers were laboring in the dawn of our present scientific age—an age now so gloriously illumined by keen observation and accurate data gained in the deadhouse and from the study of

living pathology at the operating table, we have inherited a tendency to take the surface view of things, to look at injuries where no external wound presents from the superficial viewpoint.

It does not require a very high degree of ordinary intelligence, and perhaps and even more elementary knowledge of the art of surgery, to know how to advise patients presenting themselves with gaping wounds of parietes or muscle but a pardonable pride should be accorded one who looks beneath the surface and sees, with the trained eye of the modern student of medicine, serious trauma to underlying organs. It is to that class of cases in which no tell-tale external injury presents, that I desire to direct your attention.

While it is true that in the lifetime of the average practitioner of medicine, only an occasional case of this character will be brought under his observation, the serious nature of these injuries and the disastrous results following failure to correctly interpret them make it of pressing importance that we fix in our minds certain facts bearing upon this question if we are indeed to

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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be prepared to handle in meritorious fashion this emergency when it comes.

It is not my purpose to go into an elaborate and technical discussion of the question of intestinal and kidney injuries. I could not if I would. Moreover, the literature is replete with a satisfactory discussion of this phase of the subject. I wish only to bring to your attention a few points that have been impressed upon me by a limited experience in handling these cases, in the hope that we may profit thereby.

Since it is my desire to especially engage the interest of that large class of physicians practicing in the small towns and country districts, the class into whose hands the majority of cases under discussion first fall, I shall refrain from an attempt to offer any scientific theory purporting to explain how, in a given case, the injury occurred and hasten to say that the questions which concern us and should command our most earnest attention are: How shall we recognize these injuries? What advice shall we offer? What course of treatment shall be urged, and when?

I have dared to discuss the subject of kidney and intestinal injuries together because the line of investigation which I have followed in an effort to decide, in a given case, the proper course to pursue in treatment, has run parallel.

When a patient presents himself, without external evidences of injury, but with the history of having received a blow over the loin or abdomen, such as a kick of a horse, or any similar injury produced by direct and forcible impact of a rapidly moving object, or, in the case of suspected kidney traumas, when the body has been doubled upon itself forcibly as in falls from a height, and, when **such** an injury has been followed by the familiar symptoms of shock—rapid weak pulse, pale skin, sub-normal temperature, cold perspiration, nausea, vomiting—then, by pain of more or less severity and, in the case of suspected kidney injury by the formation of a gradually increasing, resistant mass about the injured organ, or, in suspected intestinal injury by the appearance of board-like rigidity and tenderness of the abdominal walls, we are confronted with a condition, in my humble opinion, that will not permit of temporizing methods. In the words of the immortal Murphy, expected treatment in such cases can only expect unsatisfactory results, and when the history of

injury, symptoms of shock and local signs of mischief are persistent and clean-cut, our plain duty is to look upon the case as urgent, demanding radical treatment and to so advise. Now comes the question fraught with far-reaching significance, the answer to which determines the outcome in most cases. When shall the patient be subjected to radical treatment? When shall the wound be explored, and when shall the light of day be turned on by heroic, yet conservative, exploration? After you have forgotten every other word uttered in this paper let me hope that you will "Grapple this answer to your soul with hoops of steel." When shall we urge that these cases be explored? Just as soon as the patient can be gotten into competent hands, if possible, within the first twelve hours. If we wait until the diagnosis is confirmed by terminal complications, not only has the golden opportunity for surgical help passed, but we have, thereby, brought down upon our heads the just condemnation of all men. I am convinced—more convicted by having observed and participated in blunders on this question—that what we need most in this, as well as other classes of traumatic surgery, is radical conservatism.

There has arisen, justly, in your minds perhaps, this question that you would have answered. Are there reliable signs and symptoms, which, when applied early in cases of suspected intestinal or kidney rupture, will clearly indicate whether the patient has a serious injury and requires exploration, or has not a serious injury and may be treated by the dangerous method of watchful waiting? The answer to this question is the *sine qua non* of the whole subject, involving the ability of the attending physician to correctly interpret what he observes. I should say that there are no pathognomonic symptoms of the degree of injury sustained in a given case, and that the chief end of service to the patient has been obtained, in all doubtful cases, when we have placed him where exploration may be safely done.

I have no reference, in this paper, of course, to a large class of injuries to these regions which, by casual investigation impress the physician with a sense of simplicity. This class needs no discussion as they need little treatment. But, when the picture is clouded by a history of injury sufficient to produce deep-seated laceration of tissue, by a history of shock following the injury, and

by the more significant local signs such as persistent rigidity of muscles, tenderness and pain, we have before us a question, the correct answer to which holds in its uncertain hand the life or death of the unfortunate victim. I want to offer in conclusion, and in an effort to further clarify this subject, brief histories, findings at operation and results, in six personal cases, three injuries of kidney and three of intestine, respectively.

Case 1. White male, age 46, first examined 5 p. m., June 28, 1908. History of having been thrown from a horse with terrific force against the ground, the body being doubled upon itself upon alighting. Immediate symptoms of shock ensued, patient became weak, nauseated, body soon bathed in cold perspiration. I saw this man some thirty minutes after injury when, in addition to these signs of shock, extreme restlessness was observed and great pain complained of referred to the region of the right kidney. Examination of this region revealed marked tenderness and board-like rigidity. Examination some hours later showed persistent rigidity of muscle with the addition of a mass about the kidney of the injured side. The abdomen was also tender and very rigid. At the end of eighteen hours after injury, with persistence of pain, tenderness and tumor-mass, with elevation of temperature, rising pulse and bleeding from the bladder with every urination, the right kidney was exposed by lumbar incision, when it was found surrounded by a large quantity of blood clots, severely lacerated, the pelvis widely opened, and the posterior peritoneum covering the kidney torn, permitting the entrance of blood and urine into the peritoneal cavity. The kidney was removed, cavity cleared of blood clots and drained. Abdomen was opened and found to contain quite a large quantity of blood clots which were removed and this cavity also drained. Patient made rather stormy, but uninterrupted recovery. At this writing is hale and hearty.

There could be no doubt of the necessity of exploration in this case. Resection of the kidney appeared to me to be justified.

Case 2. White, male, age 20, admitted to hospital, August 18, 1915, with history of having received twenty-four hours before admittance, a blow against costal margin over left kidney region, when, in a game of baseball in which he was playing, a run-

ner struck him forcibly with his knee, while injured was crouching over first base. Symptoms of shock followed immediately, pain ensued and was continuous. Nausea was marked. Temperature slightly elevated, pulse only 78 on admittance to hospital. Examination of renal region twenty-four hours after injury, and on admittance to hospital, showed a mass about the left kidney, tenderness and marked rigidity. Catheter showed blood in bladder. Exploration of kidney advised and accepted. Operation performed at once, showing, on exposure of kidney, multiple lacerations so disorganizing the kidney that it was resected. Cavity cleared of clots and drained. Peritoneum not opened. Uneventful recovery: patient now in good health.

This case was one where, if severity of objective symptoms alone had been considered as an indication for exploration, the policy of watchful waiting would likely have been pursued. In the last case of the kidney series, now to be reported very briefly, the result of the method of treatment sometime spoken of as expectant, may be seen and contrasted with the method followed in the cases just reviewed.

Case 3. White, male, age 31, admitted September 18, 1916, with history of having been thrown from a horse, striking right lower costal region against railroad iron, producing acute doubling of body on itself. Symptoms of shock followed. Patient was brought to hospital some three days after injury when he was found with a temperature of 99.4, pulse 80, and apparently in good condition. Examination of injured region revealed marked tenderness over kidney, board-like rigidity of muscles and a large mass in the illeo-costal region. There was no blood in the urine. This patient refused operation, which was urged, but remained under observation in the hospital for eight days. During this time there was no change in the local symptoms. Slight daily reaction of pulse and temperature. Left hospital with tenderness and rigidity in right kidney region and with a palpable mass about the kidney. One month later, having been in bed now five weeks since injury, and all local symptoms persisting, with marked increase of systemic symptoms, this patient came to operation, when it was found impossible to complete a resection of the kidney due to the impoverished condition of the pa-

tient, although exploration proved it to be a case of pulpified kidney. This patient died within twenty-four hours following attempt to relieve the condition by belated surgery.

Case 4. White, male, age 58; admitted to hospital October 23, 1911, with history of having been kicked in the left lower quadrant of the abdomen by a horse, some forty-eight hours previous to admittance. Symptoms of shock followed the injury. This patient was seen by his family physician who put him to bed to await results. Nausea, pain and tenderness of abdomen presented and on the second day after injury, with symptoms of peritoneal inflammation appearing, he came to hospital. On examination now forty-eight hours after injury there appeared board-like rigidity of abdominal walls, marked tenderness, distension, and the physical appearances of peritonitis. There was also a lump in the left groin presenting the symptoms of strangulated inguinal hernia. Operation advised at once. Abdomen opened, when flocculent fluid and pus appeared. Search revealed rupture of small bowel about 18 inches from the ileocecal valve and the exploring hand also encountered a knuckle of small bowel attached at the brim of the pelvis which proved to be a strangulated femoral hernia. This was released and the hernia opening closed. After closing the opening in the bowel and establishing free drainage of the peritoneal cavity, the abdomen was closed about the drains and the patient removed to bed. There was a slow, but gradual recovery. Investigation convinced me that this hernia descended coincident with the injury.

The recovery of this patient was out of the ordinary, since the exploration was late, some fifty hours after the injury.

Case 5. White, male, age 50; admitted to hospital December 8, 1913, with history of having been kicked about umbilical region by a horse fifteen hours previously. Following the injury patient was faint, vomited and had abdominal pain. His family physician was summoned and found him in bed, but fairly comfortable. The abdomen was rigid, tender and slightly distended. He was advised to remain quiet. On a second visit some five hours later patient gave history of having vomited again and was complaining of pain about the seat of injury. An enema had been given which produced immediate, excruciating pain in the abdomen

and increased the nausea and vomiting. Local symptoms were about the same as on first visit. Patient was removed to hospital. On admittance fifteen hours after the injury temperature was 100, pulse 78, patient looked comfortable and insisted that he was all right. Laughed at the idea of operation. Yielding to urgent advice that he submit to exploratory operation, the abdomen was immediately opened when a hole the size of a dime, about 12 inches from the ileocecal valve, came into view. I was surprised to find the soap-suds enema in the peritoneal cavity. Hole in bowel repaired, drainage established and abdomen closed about drains. Uneventful and rapid recovery ensued.

This patient was handled in ideal fashion, and there could have been no improvement unless the operation had been performed at the end of four or five hours instead of fifteen. Recovery in such cases operated upon early may be expected. I would call attention to the fact that operation was advised in this case entirely upon physical findings, and not on the patient's appearance or idea as to whether he was severely hurt or not. It is also worthy of note that the patient had a sense of well being and would have been up about his farm if permitted.

Case 6. White, male, age 28; also admitted with history of having been kicked by a horse. Unfortunately this patient was not seen until the third day after injury. On admittance 62 hours after the injury had been received, patient presented typical symptoms of peritonitis. Looked sick, was toxic, and had high fever and rapid pulse. The usual immediate symptoms of shock, pain, vomiting, rigidity, etc., were elicited in the history. Although considered in the terminal stage of peritonitis, the abdomen was opened, when pus and fecal matter gushed out of the wound. Search revealed rupture of small bowel some two feet from the ileocecal valve. Opening closed, abdomen drained. Death ensued within the following twenty-four hours.

This case illustrates a type in which a so-called brilliant diagnosis might be made by a tyro in medicine just in time, however, to get the undertaker on hand for the final scene.

Concluding, I would urge that in all cases where deep-seated viscera has been subjected to the chance of injury and in which grave

doubt exists as to the degree of damage sustained, exploration is to be recommended.

Radicalism, as opposed to the policy of watchful waiting, is commendable in the physician or surgeon if it means courage to do his duty which he has recognized after exhausting all scientific methods of precise diagnosis at his disposal.

In fair weather and in foul it is devoutly to be hoped that the judgment of the profession may be quickened to action by an intense desire to save human life, or to palliate otherwise fatal diseases.

To attain these high ideals, let us bear in mind that in medicine, so it is in surgery, "An ounce of prevention is worth a pound of cure." The surgeon repairs, but does not recreate. Exploration does not hurt if it does no help. When in doubt, explore. Your courage will be rewarded by the favorable outcome of cases.

827-8 Candler Bldg.

DISCUSSION OF DR. ROBERTS' PAPER.

Dr. H. C. Whelchel (Douglas): One case reported by the Doctor was the one which happened to come under my observation, and from the standpoint of a general practitioner I want to add to this what perhaps the Doctor may say in closing, and that is the importance of our recognizing the injury at the earliest possible moment. I was called to this case early in the morning. I recognized the gentleman was in severe shock, but he was sitting in front of the fire and said he was all right, and I was in doubt, so postponed advising him definitely to go to a sanitarium for a laparotomy, and told him I would call again later in the day, which I did. I decided he had an injury, either an intussusception or a laceration of the bowels, and advised him to go to a hospital. He came, but on reaching there almost talked us out of the operation. His pain had gone; his rigidity had seemed to relax, but that was the psychic effect of going to the hospital. We finally did the operation and the Doctor has told what we found. In this case the patient almost persuaded us to let it go thirty-six hours, and had we done so the operation would have been a failure, whereas it proved to be a success.

Dr. C. W. Roberts (closing): In the remaining few minutes I want to give you the

benefit of a country doctor's ideas about a few things which I am glad to say I have gained by eight years' practice in the rural districts of South Georgia. It seems to me that we have stressed today the question of diagnosis, and the point I want to make is this: We have divided the profession of medicine into what we call the medical men and the surgical men, and my idea is that it is not necessary for the general practitioner to worry about making a diagnosis. It is well if he can make the diagnosis, to do so. I happen to have a friend who prides himself on the fact that he has never yet fallen down in diagnosis. Well, if he has not, he is certainly to be congratulated on that point. But the man in general practice, it seems to me, should have at his command a surgeon that he feels that he can call at any time or place regardless of whether the patient can pay or not, and the surgeon should be called and his opinion should be the final judgment in the case. If he will not come because the patient can not pay, turn him off and get another surgeon. It is to the surgeon that these cases should be referred for decision as to what is the matter and what should be done. If the patient is kept until anybody—doctor or layman—can say, "This fellow has a ruptured bowel or kidney," then the time is past when something can be done. Put the responsibility on the surgeon; call him into the case if you consider it has a surgical nature.

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ACIDOSIS.***W. L. Funkhouser, M.D., Rome, Georgia.**

Acidosis has recently brought forth so many articles and such a number of theories that I hesitate to say anything for fear my experience would be so at variance with others that it would not be worth while. But my observation is apparently in accord with the deductions drawn by men well qualified to express an opinion substantiated by their laboratory and clinical findings.

In discussing this subject it must be borne in mind that the term acidosis is applied to a condition which may be either primary or secondary. It should be distinctly understood that an acetonuria due either to recurrent vomiting, starvation during the invasion of a disease such as typhoid fever, tonsillitis, measles, scarlet fever or gross errors in diet, or an acidosis as a sequelae to diabetes, dysentery or post-operative, should not be termed true primary acidosis; neither should a condition with a trace of acetone in the urine or acetone odor to the breath be considered true acidosis.

After having eliminated all of the conditions which may be associated with the presence of acetone in the urine, the fact that there is a true primary acidosis as a distinct clinical entity must be emphasized. All who have paid especial attention to the study of diseases of children must have recognized a condition which has terrorized the faculty, taxed their skill to the utmost and has added unexpected mortality. The rapidity with which it develops, the violent toxemia that it presents, the obstinacy with which it resists treatment and the rapidity with which life becomes extinct is a shock which makes us feel that our energies have not been expended in the proper direction. Indeed, it was not until I saw the helplessness of many pediatricians of this country in dealing with this condition that I consoled myself in the loss of several of my cases; not until I found the answer in the statement that the persistent increased intoxication was due to a continued dealkalinization of the tissues of the body which accounts for a failure to get results, after saturation of the body as far as we could with alkalies, and the in-

stitution of eliminative measures. There is nothing new in anything that appears in this paper, yet I offer this merely to emphasize the fact that we are dealing with a condition which is rapid in its invasion, violent in its symptoms and often fatal in its results.

Acidosis is the explosion following faulty metabolism. The accumulation of the organic acids, diaetic and oxybutyric acids in the body is acidosis. Acetone is a product of these organic acids. Acetone bodies are formed in normal metabolism, but do not accumulate. When there is an accumulation, the alkali reserve of the body is neutralized with a resulting dealkalinization of the tissues. If this accumulation is not large, the loss of this alkali reserve not too great, the body is able to adjust itself, we have resulting acetonuria, not acidosis. If the acid accumulation is too great to be cared for by this alkali reserve, we have an acidosis. Increased metabolism during fever gives an acetonuria. If, therefore, we depend on the presence of acetone in the urine to make a diagnosis of acidosis the fallacy of our deduction is apparent. Acidosis is a diminution of the alkali reserve in the body beyond the power of tolerance plus the degenerate changes in the liver and kidneys. The lessened oxidation in the lungs causes carbon dioxide to be retained in the tissues with a resulting asphyxia. Impairment of oxygenation, and the imperfect metabolism of fat in the blood results in a lipemia. Acetone is formed as an intermediate product. "It is obvious that a vicious circle soon becomes established, for the greater the amount of acetone bodies in the blood, the more respiration becomes impaired; and the more the respiration is impaired, the greater becomes the production of the acetone bodies." Laekner and Gauss have proved that "this is not an infection, hence could not be epidemic."

All who have seen a severe case of acidosis, especially a fatal one, appreciate the difficulty of trying to describe a chain of symptoms which would give a comprehensive picture to the mind of any one who has not observed this condition. You might describe a skin lesion with almost superhuman descriptive power and yet the actual observation will be different from the preconceived idea of this lesion. So, likewise, would any description of these symptoms, especially when we state that the child may have a

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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high temperature or a normal temperature, be constipated or have a diarrhoea, may vomit violently or not at all, may show an oedematous condition or may show none, the rule being, however, that the child is stupid, abdomen relaxed, constipated, rapid breathing, very fast pulse, peculiar red color to the lips and to the cheeks; sunken eyes, sighing respiration, acetone odor to the breath appreciable on entering the room, and persistent vomiting. The intensity of these symptoms, with the feeling that you have acquired by experience and powers of observation, impress upon you the fact that you are in the presence of a desperately sick patient. You feel that something must be done and that at once. This is true, for the rapidity with which you are able to perfect proper elimination and neutralization of this acid intoxication will enable you to swing the balance in favor of recovery. The difficulty of treatment in my hands has been my inability to get enough alkali assimilated because the children are usually so nauseated that they vomit incessantly and the bowels will retain only a small amount of soda or dextrose solution. Just as much soda is given as possible, either by mouth or rectum. I have used a 5 per cent bicarbonate of soda subcutaneously, but this is dangerous on account of possible slough. It is preferably given intravenously. I have used normal salt and dextrose solution subcutaneously to take care of the waste and replace the fluids lost by vomiting. Some cases of violent diarrhoea are observed as result of soda administered by mouth. I have never used bicarbonate of soda in the superior longitudinal sinus as some recommend, but have used 5 per cent dextrose. All milk and fats should be omitted from the diet, but cereal decoctions and starchy foods are given just as soon as the child can retain them.

If the stomach will retain a purgative, I use a saturated solution of salts, teaspoonful every hour until there is free purgation. If the temperature is normal or subnormal, I use heat to the extremities. If there is fever, put ice cap to the head. Camphor in oil is used to stimulate the heart. Fresh air is insisted upon, the child being permitted to go out of doors when practical.

I think, gentlemen, that as a prophylactic measure, we should carefully watch the diet and hygienic management of all children intrusted to our care. If, during illness, there should develop an acetone odor to the breath

and acetone found in the urine, soda water should be given by mouth, also 10 grains of dextrose in solution every two hours; milk and fats should be discontinued and a cereal diet substituted; this also applies to children on the eve of an operation, especially if the child has shown any predisposition to acetonuria or acidosis. Should an acidosis develop, the institution of heroic measures at once is imperative.

DISCUSSION OF DR. FUNKHOUSER'S PAPER.

Dr. George C. Mizell (Atlanta): This question of acidosis has been very interesting to me for years, but I have not found a satisfactory explanation of the development of the condition. The theory that the volatile fatty acid is the cause does not seem to hold good. The lower fatty acids are already eliminated by the kidneys. The fatty acids of the higher group are not so readily eliminated by the kidneys. The only organs of the body that will take care of the higher fatty acids are the glands and the skin, so it may be that the intermediary fatty acids really produce acidosis in the body and cause the development of the symptoms.

The dangerous thing in acidosis is the vomiting. If you are able to control the vomiting, you will be able to relieve the patient. The method of treatment by the injection of glucose into the bowel appears to me to be most irrational, for glucose is shown to undergo fermentation very rapidly, which really increases the acidosis instead of relieving it. The alkalies are indicated, but at the same time we must bear in mind that alkalosis is just as sure death as acidosis, so the alkalies should be given in measured doses. With these children who are old enough to choose food or in adults the best method of relieving nausea and vomiting is small meals of solid food frequently repeated. By a little experimentation you can demonstrate that solid food will often be retained where liquid food will be vomited, and if the feedings are deferred longer than two hours, the patient may vomit the food. So in children we make an effort to feed them just as much food and as often as they will take it, limiting their food especially to the farinaceous foods, because the

farinaceous foods do not so readily undergo fermentation. Unless there is an intense putrefaction of the intestine, it is wise to give a little meat, if only a mouthful, with a cracker or two every two hours. Patients will often retain the meat and cracker when they will vomit just the cracker alone. We make it a point to give the alkalies just before the two-hour feedings, and give it well diluted with water, and if the first dose of alkali is vomited, then we repeat it, and nearly always the second dose is retained. It is rarely ever that a patient will vomit more than once or twice after this method of treatment is instituted.

Dr. A. G. DeLoach (Atlanta): I would like to ask if the acidosis is always accompanied by vomiting. Also, will an acidosis cause a thrombosis?

Dr. W. L. Funkhouser (Rome): I think the fundamental principle in the treatment is the elimination of fat from the diet. The last word has not been said in regard to the theory, the etiology, the complicated chemistry or the metabolism of all cases, but I do believe that the institution of alkalies and the elimination of fat from the diet is fixed. In breast-fed babies I think it is best to take them off the breast and put them on barley water or cereal water, and an older child should stay off of milk temporarily. Following post-operative cases in children you must be very careful to look out for an acetone condition, so you can institute treatment before an acidosis develops. Cases of acidosis that I have seen have always been associated with vomiting during some stage of the disease. As far as the forming of a thrombosis is concerned, I will have to admit that I never saw a case following acidosis.

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DO YOU KNOW THAT

Infected towels spread eye diseases?

GASTRIC AND DUODENAL ULCER.*

Drs. G. Pope Huguley and George C. Mizell.

Ulcer is a solution of continuity of the mucosa of the stomach or duodenum. In the gastric type the ulceration varies from the multiple superficial erosions described by Dieulafoy to the true peptic ulcer. Ulcers of the stomach, according to various observers, are frequently multiple, while it is believed that ulcers of the duodenum are single. In considering the etiology of these conditions we will merely mention the experimental production of ulcers by ligating the left hepatic branch of the portal vein, as described by Gungerman, and consider only the causes which appear to us to be more or less obvious. Owing to the limited time and our desire to dwell upon other features of these conditions, we beg to submit these causes in a schematic way.

(a) Burns of the Abdominal Wall.

(b) Adhesions of omentum, due either to inflammatory changes or from acutely inflamed appendix, or a pericholecystitis, or following operations. These adhesions producing distortions.

(c) Chronic infections of the appendix, or gall bladder, or both. Moynahan, as early as 1906, stated that he always removed the appendix in every operation for gastric or duodenal ulcer, if he wishes to be sure of a cure.

(d) Turck has produced ulcer experimentally by injecting colon bacilli intravenously, and Rosenow's recent work in which he has produced ulcer by the intravenous injection of certain strains of streptococci, this giving rise to his well known theory of focal infections, prominent among the foci being the tonsils and teeth.

(e) Syphilitic ulcers are, of course, due to a definite cause, and are asserted by some observers to be the only type of ulcer found in total absence of HCL.

(f) HCL is no longer regarded as a specific cause of ulcer, but undoubtedly plays an important role in delaying or preventing healing.

(g) Lane's well known theory of Colonic stasis, with its resulting toxæmia.

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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(h) Trauma, due to spasm of the pylorus, produced by the undiluted HCL, the contact of food, or conditions not located within the stomach, or duodenum per se.

It is estimated that 60 to 80 per cent of all ulcers are found in the stomach, and Mayo has reported duodenal and gastric ulcers occurring in the same patient in 3 per cent of his cases. Gastric ulcers are generally found on the lesser curvature, and duodenal ulcers usually in the first portion of the duodenum. Women are more commonly a subject of these conditions than men. In our own cases in the ratio of 13 to 7. These conditions are generally of the third and fourth decade, our youngest being in a boy of 11, and oldest 66 years. The course of most ulcers is chronic, with a tendency in many cases toward periods of inactivity. Some present quite a marked periodicity, with pronounced aggravation of symptoms in spring and fall. Many cases are of many years duration. Among the complications we may mention malignant degeneration, especially of the stomach, very rarely, if ever, of the duodenum; actual stenosis, due to the formation of cicatricial tissue in the chronic or calloused ulcers. Pylorospasm is produced by the ulcer itself, or those cases of reflex spasm from lesions of the appendix, gall bladder, or pelvis; periduodenal or perigastric adhesions.

Symptoms and Diagnosis.

For the purpose of diagnosis, gastric and duodenal ulcers may be divided into two groups. In the first group we have ulcers of the fundus and greater curvature of the stomach, and, in the second group we have ulcers situated in the antrum, on the lesser curvature at the pylorus, and in the duodenum.

Ulcers, except those in the fundus of the stomach, should be more easily recognized, and is a question of localization.

There is no accurate method of diagnosing ulcers of the fundus. The gastroscope is perhaps most dependable, but, as a general anæsthetic is required, it is rarely resorted to.

The X-ray should be used, and, in the hands of an expert, may be successful. Hemorrhage, unassociated with pain and positive thread impregnation test should lead one to suspect simple or malignant ulcer of the cardia. Distress immediately after eating, with pain below the left shoulder blade, is a sus-

picious symptom. Pain between the shoulder blades is present in deep ulcers.

The symptoms of typical duodenal ulcers are: 1st, pain one to six hours after meals; 2d., tenderness over the duodenum; 3d., pain relieved by food; 4th, constipation.

The pain of gastric is not nearly so constant as duodenal ulcer. Over 90 per cent of duodenal ulcers give pain while the balance give history of distress after eating. The time of the pain is placed from one to six hours after meals, and corresponds to the distance of the ulcer from the pylorus.

Duodenal ulcer has only a slight tendency to be quiescent, while gastric ulcers are prone to exhibit quiescent periods. The pain in gastric ulcers comes in the first hour after meals. Vomiting is very frequent in gastric ulcer, rare in duodenal. Also, hemorrhage is more frequent in gastric ulcer than in duodenal. Eating does not relieve the pain of gastric ulcer, whereas, the pain of duodenal ulcer is relieved, hence the duodenal ulcer patient is usually well nourished.

Vomiting of blood, and blood in the stools, coupled with history of distress after eating, are sufficient to warrant a diagnosis of gastric or duodenal ulcer.

The surest method of diagnosing ulcers of the antrum and duodenum is the thread impregnation test of Einhorn. It may be depended on where X-ray is always questionable except in the hands of an expert, and then it is not infallible.

Next to the thread test, an accurate history is the most important aid to diagnosis.

Very often patients present such a multiplicity of symptoms that it is necessary to keep them under observation for sometime. It is not possible to make a diagnosis when there is present an intestinal putrefaction, which can cause symptoms resembling many gastro-intestinal diseases.

If the urgency of the condition does not prevent, they are placed on a lactofarina-cious diet and some laxative which will act without irritation of the bowels, for from one to four weeks. In this length of time symptoms due to functional diseases will clear up. During this period, where the situation requires, rectal feeding, or duodenal feeding, may be resorted to.

In simple ulcer cases citrated milk or peptonized milk will always be tolerated, and this is an important aid in excluding associated conditions. Gall tract, appendix and

pelvic disease, and especially adhesions and abnormal peritoneal folds continue to give symptoms, whereas simple ulcer symptoms, except the tenderness, disappear on such a diet.

It is notoriously true that symptoms due to adhesions improve very little, usually not at all, on any diet.

We wish here to submit a series of cases, with a few remarks which illustrate the necessity of a thorough study of each individual case before a conclusion can be formed as to the best method of treatment.

	Treatment		
	Simple Ulcers	Medical	Surgical
Fundus	6	6	0
Antrum	3	2	1
Pylorus	5	2	3
Duodenum	4	2	2
—	—	—	—
Total.....	18	12	6

The indications for operation in each case may be stated as failure to improve under medical treatment. It is to be noted that the number of operated cases corresponds to the nearness of the ulcer to the pylorus, and it appears probable that pylorospasm played some part in the failure of treatment. Also, there was a 12 hours residue in 3 of these cases—on the other hand, 3 with just as marked retention were relieved without operation. One of the medical cases with ulcer in the fundus of 20 years history, has had 3 exacerbations in five winters, but is, owing to age, a poor subject for operation.

We make it a rule to keep all patients under observation and medical treatment long enough to define or exclude associated diseases. As soon as we conclude that some other condition exists, we advise operation for the condition which we believe to be the primary disease.

The wisdom of this plan is demonstrated by the case of Mrs. L., who presented symptoms of acute gastric ulcer 3 months before sensitiveness developed at McBurney's point. Medical treatment was of no avail during this period. Removal of the appendix which contained a small foreign body and had a thickened muscularis, made way for relief of the gastric symptoms by medical treatment.

It is important to bear in mind that the gastric condition often continues unless careful diet and treatment is continued after removal of what appears to be the primary condition.

Simple ulcer cases were treated medically until it was conclusive that no progress was being made, and then operation was advised.

This plan has resulted in the relief of 11 cases of the series out of a total of 12 treated medically.

In speaking of medical cases, the term "cure," is to be avoided, for observation has taught that they remain cured only so long as they are more or less careful of diet. The ulcer may have been healed, but in the absence of further knowledge as to the etiology we are inclined to believe that diet plays a part.

We assume that there has been an error in the dietetic habits of these people, and seek to avoid the danger of a relapse into the error. Seasonal exacerbation in a disease does not always mean that the cause is bacterial. There are seasonal changes in the food we eat, also seasonal changes in the texture of vegetable foods and meats, e. g., fresh pork and fruits. So simple ulcer gives no symptoms on a certain diet, while on another diet, sooner or later they recur.

If trauma plays a part in producing an ulcer, it is reasonable to assume that unmas-ticated fibrous foods may so irritate the gastric mucosa of certain individuals, and thereby pave the way for ulceration.

On the other hand, ulcers present in connection with other abdominal lesions are not likely to return after the cause is removed and diet for a short period thereafter.

We come now to a very important part of this subject: That of the ulcer associated with other abdominal conditions.

Here the judgment and co-operation of both Internist and Surgeon should govern the procedure. It means much to the patient whether a simple appendectomy or a gastroenterostomy is performed on him.

Illustrating this phase of the subject, we beg to submit the following list of cases:

Gastric or Duodenal Ulcers Associated

With—

Gall Tract Disease.....	2
Appendix Disease	6
Gall Tract and Appendix Disease.....	4
Post-Operative Adhesions	4
Abnormal Peritoneal Folds.....	4
Pelvic Disease	2
—	—
Total.....	22

However much we would like to discuss these cases thoroughly, time forces brevity.

A few are selected to emphasize the importance of observation and deliberation.

In all, operation was advised and refused in but two cases; both will be disposed of by stating that medical treatment gave only partial relief. In all, the operation was for the associated condition and not for the ulcer. It is instructive to note that of 22 who submitted to operation, 19 were completely relieved, and one partially relieved. The last mentioned had gall stones and extensive adhesions which involved the stomach and which recurred.

Mrs. W. L. C. was treated for ten years for gastric ulcer before submitting to operation. Removal of appendix and adhesions involving gall bladder resulted in a cure.

One patient, Mrs. B., gave symptoms of ulcer beginning after child-birth, nine years previously. Ulcer demonstrated by thread test. Examination revealed retroversion of uterus, with uterus adherent to rectum. Operation for retroversion relieved gastric disease.

Miss K. D. presented symptoms of gastric ulcer 17 months. Appendix not sore, but deep pressure caused pain in epigastrium. After one month of medical treatment, which gave no relief, operation advised and refused. Medical treatment was continued for seven months longer with no relief, when operation was submitted to. Normal appearing retrocaecal appendix was removed, resulting in a cure.

Mr. C. W. C. had gastric ulcer, associated with gall stones, which had never given any symptoms suggesting gall tract disease. Severe symptoms of ulcer were present two years. Exploratory operation revealed both conditions. The stones were removed and the symptoms disappeared after routine ulcer treatment.

G. K., aged 11, had severe duodenal ulcer symptoms; diagnosis made by X-ray and thread test. Hepatic flexure of colon was low and the ascending colon abnormally fixed. Operation revealed six-inch appendix and Lane's kink. Appendix removed and band cut. Cured.

Mrs. L. presented symptoms of acute ulcer of stomach for three months. After being under medical treatment three months it was discovered that the appendix had become slightly sensitive to deep pressure. This symptom, together with ulcer symptoms, continued for one month. Operation, with removal of interstitially thickened appendix,

containing a small foreign body, was followed by relief.

This case and others of the kind brings to us the potency of the appendix in producing gastric disorders. We have frequently been surprised at the lack of pathology where there was every reason to believe from result of operation that this little organ was the offender, and when pressure upon the appendix, whether tender or not, gives pain in the epigastrium or left hypochondrium, may it not be assumed that there is an abnormal condition present in the appendix which is the cause of the pathology higher up?

We have often acted on this assumption with gratifying results.

Inspection of removed appendices of more or less normal appearance show an unusually large lumen surrounded by a flaccid wall. Such appendices may well be termed atonic appendices. They are present in cases that present no attacks of appendicitis, but give history of constipation and epigastric disturbance. Just here it is in order to express the opinion that every case with history of previous attacks of appendicitis followed by gastro-intestinal symptoms, should be subjected to appendectomy when medical treatment of short duration fails to relieve.

Treatment.

From the foregoing it is clear that in ulcers where it seemed that the primary conditions could be defined, we have contented ourselves with clearing up the pathology outside the stomach or duodenum. Operative procedures being followed in most cases with careful medical treatment.

When it appeared that surgical intervention directed towards the ulcer, per se, was required, we have done the posterior gastro Jejunostomy (no loop), no attempt being made towards any of the various methods of pyloric exclusion in stomach (with the exception of two cases). The multiplicity of such procedures recommended establishing, we think, the probable uselessness of any. In addition, the results obtained have been so satisfactory, and thus far having no mortality, we do not intend to radically change our plans until results reported from workers having a much larger number of cases shows better results as to cure and mortality than at present.

Peck, of New York, and Coffey, of Portland, Oregon, particularly commend the

above course of action. Time does not permit a full discussion as to the indications for the removal of the ulcer, either by excision or cautery, as recommended by Balfour. Or, the still more radical procedure recommended by Deaver, of doing a gastrotomy in any doubtful case, followed by excision, unless such excision makes difficult or impossible the gastroenterostomy. In cases not excited it may be well in the duodenal ulcer to reinforce the site of the ulcer with the omentum. In cases of doubtful or established early malignancy, the Rodman two-stage operation is clearly the one of choice.

In medical treatment a method is selected which seems best adapted to the case. Duodenal feeding, as suggested by Einhorn, when the tube is not too obnoxious to the patient, gives excellent results and should be tried when hemorrhage is present. If this fails rectal feeding may be resorted to until the hemorrhage ceases.

Peptonized milk, or better still, milk well diluted with lime water or solution of citrate of soda, has given us good results and the latter may be continued for an indefinite period. Beginning with small amounts, frequently repeated, and gradually increased, raw milk diluted, as stated above, may be given in sufficient amounts to sustain or even increase weight.

In adding food it is best to favor proteids during the early months of treatment, and gradually replace them to a great extent with non-irritating carbohydrates and fats.

(In addition to references given above, we wish to express and give credit for the help obtained from the writings of the following authors: Lynn, Mix, Einhorn, Chaney, Reisman, Ross, Smith, Dienlaffoy, Moynahan, Rosnow, Coffee, Wilenski and Geist.)

DISCUSSION OF PAPER OF DRS. HUGULEY AND MIZELL.

Dr. E. G. Jones (Atlanta): For some ten years I have been much interested in this subject of gastric ulcer, and I have come to the conclusion that so far as I am concerned I am unable to make a diagnosis of gastric ulcer, short of deformity, without X-ray information—and perhaps not then. I can not understand how a series of stomach and duodenal ulcers which have not actually been seen by somebody—this is not a criticism of Dr. Mizell's paper—can be made the basis of

any study. The diagnosis is too uncertain. It has been well said that the average stomach ulcer is in the right iliac fossa and will be cured by the removal of the appendix.

Take the subject of hemorrhage—I take it that I am not obliged to explain hemorrhage from the gastric or intestinal tract. We do not explain nose-bleed, and when we consider the extensive mucous membrane of the alimentary canal it is surprising if every person does not bleed more or less frequently. And certainly I do not have to explain a little occult blood in the stool. This may be relied on: repeated frank hemorrhage from the stomach or bowels—repeated hemorrhage grafted upon a history of long standing indigestion—will mean stomach or duodenal ulcer in 90 per cent of cases. This is helpful information. But only 23 per cent of people with gastric ulcer will ever have frank hemorrhage from the stomach or bowel; 20 per cent from duodenal ulcer. A little blood on a string in the stomach, I take it, does not have to be explained at all. My inability to make a diagnosis does not relate so pointedly to duodenal ulcer. You take a man who has chronicity of symptoms, who has periodicity of symptoms, whose distress is relieved by meals or by soda, who day after day during a period of six weeks or six months is in distress, and whose discomfort is controlled, as I have indicated, and we have a pretty clear-cut picture which is worth more than anything else, unless it be a deformity which can be explained by the X-ray or which announces itself. So that the history, as Dr. Mizell has said, is, short of deformity, the most reliable thing upon which to depend.

I have been struck with patients suffering in this way who are relieved, as the doctor suggests, by rest. Here is a man who has pretty troublesome history, but he changes his job say, and rests a day or two a week—I have a case in mind that I have seen within the last two weeks—and the rest improves him so much that he concludes he is well—and he is well temporarily. Here is another man who is working hard, and he has his thigh broken and has to go to bed for three months. He improves and concludes he is well—and he is well temporarily. He is likely to have symptoms later unless we caution him about his diet, and particularly about his rest.

Dr. Mizell has not said a great deal about the methods of operative interference that

we should invoke, and, of course, we will not have time to go into that. If the operative work was to be done distal to the pathology, we are in a bad way. I doubt seriously whether an operation is justified in that case. Personally, the people who have remained the most nearly completely well in my own hands following work of this sort are the individuals upon whom a preliminary gastroenterotomy has been done with a later gastric resection—individuals who I thought had cancer of the pylorus, and when we opened them weeks later for the purpose of resecting the cancer, found the induration largely gone. These people have afforded the most satisfactory results of any class of people that come into my hands.

Dr. George M. Niles (Atlanta): I am glad to be able to discuss this exceedingly well-prepared and orthodox paper of Drs. Mizell and Huguley. The points which they made are certainly established and open to no reasonable doubt.

In regard to the string test, I must admit I am somewhat skeptical. I have had several instances where the string was discolored by bile or other agent where it was really not a true and fair index to the pathology within the stomach. However, that is one of many methods. It is worth while and in some instances it is most helpful.

In regard to the diagnosis of gastric ulcer, I believe that with the methods we have at hand, and especially with the painstaking, thorough and intelligent Roentgen ray examination, that in a large majority of the instances either a deformity or a niche, or some lack of normal contour of the stomach will show and should show. I might say that in my own experience just now I do not remember any positive diagnosis of gastric ulcer which went to operation but what the result was actually demonstrated later on by the surgeon to his satisfaction. In regard to duodenal ulcers, I feel that an intelligent use of the Roentgen ray should demonstrate it beyond a peradventure. Some of you may remember that a year ago that was the subject of my demonstration and I believe that we show in every instance that the Roentgen ray was a very practical help.

One question which comes up very often, not only to the gastroenterologist, but to the internist, is this: Here is a patient in the prime of life, or younger, possibly 25 to 30

years of age, who is being plagued with the symptoms of gastric ulcer—symptoms of discomfort and pain and all the afflictions that go along with it. He is willing to do anything within reason. The question is, shall I invoke the aid of surgery, shall I or shall I not? Sometimes it is hard to decide correctly and in the interest of the patient. We must remember this, that our ulcer patients of today are liable to become our cancer patients twenty years from now. If you will take some of these people past the meridian of life, who give intestinal symptoms, and dig back into the archives of their past history, they will give a recital of heartburn, hunger pain, distress at intermittent intervals, and so forth. Of course, the intelligence of the patient, the perseverance and persistence with which he will seek treatment and follow the recommendations of the attending physician will have a large influence. His financial ability to rest when necessary and provide himself with proper food, all these have their weight. Again, in regard to surgery, too many people think that after they go to a surgeon and are operated on for gastric or duodenal ulcer, there is nothing further to do, and that they are well forever and eternally. That is a mistake.

Dr. J. T. Rogers (Savannah): In regard to the diagnosis of these ulcers, I would like to say that in our experience, if we have all the clinical symptoms of ulcer of the stomach, and it is not chronic, we lay the greatest stress on the string test. In our experience it has proved positive, and we, of course, have to remember that the eroded mucous membrane of the stomach will also show blood on the string, but with this irritated mucous membrane you will find spots of blood on different portions of the string, whereas if it is an ulcer you will find the blood on a longer portion of the string and only in one place, as a rule. The duodenal ulcer is also found usually to show very plainly on this string, and we do not see any reason for making a mistake in judgment between the color of the blood and the color of bile. We have been able to make diagnosis of ulcer of the duodenum and actually by measurement tell to a quarter of an inch as to how far this ulcer is below the pylorus. I believe this is the very best test that we have outside of the clinical symptoms. I may say it is better than clinical symptoms. If blood is shown there

we know there is an ulcer unless it is spotted along with blood drops, when it would show that it was an irritated stomach.

The Doctor spoke about duodenal ulcer as being single. It is not always single; it is as a rule, but it may be double. He spoke of the pus in ulcer of the stomach being increased by food and not relieved. That is the rule and probably in nine cases out of ten that would hold good, but we do find once in a while that food will actually stop the pain of ulcer in the stomach, but only for a short time. In our experience, where the ulcer is relieved in the stomach by food it is where the patient has a very great amount of hydrochloric acid and then we suppose that the acid is being taken up by the food and for the time being is not irritating and burning the ulcer. He spoke of taking out a chronic appendix. If we find a patient with an ulcer, complicated with chronic appendicitis, it does not matter how acute it may be, or how well we believe we could manage this ulcer provided there was no chronic appendicitis, we would not fool with it 24 hours until the appendix was taken out. We also want to look well to the teeth and tonsils and see that there is no focal infection in the mouth and throat. We have found that these ulcers of the stomach may be caused from focal infection, just the same as pain in the joints. Now some of our friends have comforted us in the last two or three years by the use of the X-ray. We do not feel any more that we have given a patient with ulcer of the stomach or duodenal ulcer a complete and full examination, or that we have used all the means at our disposal until we have used the X-ray.

Dr. F. K. Boland (Atlanta): Dr. Mizell referred to duodenal ulcer following burns. I have seen a great many cases of severe burns, but I have not seen cases that presented any symptoms of duodenal ulcer. I think it is an extremely rare condition. I would like to ask how many men have seen duodenal ulcer following burns. I think it is a rare condition. It is a bugbear to us when we have a case of bad burns.

I would like to emphasize the importance of removing the appendix in all these operations in the upper abdomen. We make it a rule to extend the incision down low enough to pull up the cecum and remove the appendix. I think it is a good rule to follow,

and no doubt a lot of our good results are due to this.

Dr. George C. Mizell (closing): There are two excuses for this paper. Some may think that they are very small excuses; we think them very important. The first is that this paper is intended to emphasize the importance of observation. We had stressed yesterday afternoon by Dr. Davis and those who discussed his paper the importance of history and examination. Dr. White mentioned making an examination, and then making another examination. I would like to add to that that I would make repeated examinations. Keep these patients under observation and treatment until you are able to form some conclusion as to their condition.

In reply to Dr. Jones in regard to the thread test, I think Dr. Rogers has very fully answered that point. We do not make a diagnosis of indurated ulcer with one thread test. If you get a positive thread test one time and do not get it the next time, you suppose that the patient has not a very resistant ulcer to deal with. I think it is pretty well settled now that relief by giving soda is of no significance whatever. During the observation of the patient you will find that symptoms will come out which he had never thought of before. The longer you continue your observation the more information you will get in regard to the symptoms, and it is by the analysis of these symptoms that we make our diagnosis. No doubt many of you read the very able paper of Dr. Mix, in the Chicago clinic a few weeks ago, where he makes a diagnosis of ulcer of the stomach and duodenal ulcer by symptoms, and not only makes his diagnosis by symptoms, but also localizes these symptoms and will tell you just where the ulcer is present and whether it is adherent to the gall-bladder or ready to rupture into the gall-bladder. If you are in doubt about the spot on the thread, it is a simple matter to make an occult blood test and demonstrate whether the spot is due to blood or not. In regard to the X-ray I will say that the X-ray will give you positive evidence in advanced cases only. We mentioned the burn, as Dr. Boland stated. We have never observed cases of duodenal ulcer as a result of burns. We only stated it in order to cover those conditions that had been suggested as the cause of ulcer.

I want to assume full responsibility in this paper for the remarks in regard to the

appendix. My work is internal medicine. I have had charge of the medical treatment of these cases and the idea did not originate with the surgeon. We are often prone to attribute extreme views to the surgeon. This view may be an extreme one, but there is some reason to believe that an appendix with a thin muscular wall, in which there is a large lumen that easily admits pus and in which there is great difficulty in getting rid of this pus—it is reasonable to suppose that an appendix of that kind will in its efforts to get rid of this pus become very much inflamed.

A MODIFICATION OF NOGUCHI'S COMPLEMENT FIXATION TEST FOR SYPHILIS.*

Dr. Lee Howard, Savannah, Ga.

Epoch-making theories and observations in seriology, as in other fields of research, bear fruit only in their application. The technical detail of converting fundamental principles into accurate methods is quite as important as original observations. But, while a great theory is often the product of a single worker, a good test more often develops through a slow refining process from the hands of many experimenters—and no technical procedure is perfected for all time. Even best-known and most widely used tests are being simplified and improved from time to time.

This improving process through which our most useful seriological tests are perfected is usually one of reducing and simplifying. Thus, through repeated changes, highly technical procedures, useful only in the hands of a few originators, became in time widely used and accurate tests. Of two or more equally accurate methods the simplest is obviously to be chosen. Other things being equal, simplification means a gain in accuracy. The fewer factors concerned, the fewer sources of error—while the value of saving in time, labor and expense, is striking.

With these general facts in mind I will proceed with the chief matter at hand, describing a modification of the best known seriological test, namely, the Complement Fixation Test for Syphilis.

Though most sero-diagnostic tests for sy-

philis are known as the Wassermann test, or reaction—no one now employs the original technique as described by Wassermann. In fact, none of the early attempts to employ the Bordet-Gengou Phenomenon as a test for syphilis were practical. Neither does the almost general usage of the term Wassermann test mean uniformity in the system used or technique. Almost every well known serilogist uses independent modifications in the technique of the test. I will not go into the legion of modifications and improvements upon the original Wassermann test; but describe briefly the Noguchi Test or System.

Not to consider the familiar principles involved or describe the detail of the test, briefly, Noguchi's system differs from the Wassermann and most of its modifications, in the use of human corpuscles and anti-human amboceptor. Also by using an acetone insoluble antigen, fresh, active, patient's serum may be used.

In using the Noguchi system I've found it of great advantage to sensitize the corpuscles with amboceptor before adding them to tubes containing patient's serum, complement and antigen. Noguchi describes two procedures, but in both adds amboceptor to tubes in the form of impregnated slips of paper. I use amboceptor impregnated paper as described by Noguchi, but have found it impossible to cut paper into pieces of uniform size that will contain the exact strength of amboceptor desired. Besides, paper does not have the same thickness throughout or absorb amboceptor uniformly.

My procedure is to snip strips of amboceptor paper into short lengths, enough to give a certain excess of amboceptor for the tubes needed. If, for example, 10 tubes requiring 2 units each of amboceptor are desired, paper estimated to contain 24 units is used. These small bits of paper are placed in a centrifuge tube with 5 or 6 c.c. of normal saline solution and agitated every few minutes for 30 minutes to dissolve out all the amboceptor. The tube is then centrifuged for a short time to clear solution of particles of paper, and amboceptor solution poured off into another tube. To this is added the corpuscles to be used in the test at hand. If 10 tubes, as for above example, 1 c.c. of a 10 per cent suspension of washed human corpuscles is added and mixed thoroughly with a pipet. This mixture of amboceptor and corpuscles is next incubated

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for one hour. At the same time the rack of tubes containing the other components of the test is placed in the incubator for the same length of time to allow fixation of complement if syphilitic anti-body be present. At the end of the hour, or in less time, it is noted that the corpuscles in the amboceptor corpuscle mixture have dropped to the bottom of the tube and a few revolutions of the centrifuge packs them so tightly that the tube can be inverted in pouring off the saline without loss of a corpuscle. These sensitized corpuscles do not behave like normal ones, but are heavier and will begin to settle in a few seconds after being uniformly emulsified in saline. After pouring off saline which contains excess of amboceptor, sufficient saline is added to make exactly as many c.c. corpuscle suspension as there are tubes. In example cited 10 c.c. The corpuscles are now thoroughly emulsified with a pipet and 1 c.c. added to each tube. Hemolysis is noted almost immediately in negative tubes and those containing no antigen.

The most obvious advantage in the above procedure is exact control of amboceptor. By using an excess every corpuscle is certain to be completely sensitized while the excess is discarded.

The problem in any system dependent upon fixation of complement is one of exact balance and adjustment of each element. Each component is made up of biological qualities that can not be determined by physical or chemical methods. However, to know that each element is not only present, but present in exact proportion, is imperative.

I will not describe the detail of preparing and adjusting antigen and complement as employed in the Noguchi system, but uniformity in amboceptor and corpuscles makes adjustment of the entire system practical and easy. With a little practice, insufficient amboceptor or undesirable corpuscles can be readily detected by behavior of corpuscles after being sensitized.

In the Wassermann procedure it is often necessary to allow tubes to stand some hours before making final readings. Such is not the case when sensitized corpuscles are used. Hemolysis is complete in negative tubes at the end of 15 minutes in the incubator or water bath. The elimination of particles of paper from the tubes by my method is an advantage well worth mentioning.

As a technical procedure the Noguchi system has decided advantage over the Wasser-

mann. It is simpler in every detail, both in preparation of components, complement, antigen, amboceptor, corpuscles and patient's serum, and in their combination. That it is a dependable test for syphilis, satisfactory, continuous use in the United States Army and Navy for several years, alone, bears sufficient proof.

Simplicity of technique is not the only factor that makes for accuracy in the Noguchi system. That fresh, active, rather than inactivated patient's serum can be used is a striking advantage, making the test more sensitive and reliable. Noguchi has shown conclusively that inactivating, heating a syphilitic serum for 30 minutes at 55 degrees C. reduces the syphilitic anti-body to 1-4 its original strength. It is evident that with a system using only inactivated serum many weakly positive reactions will be negative, most of the syphilitic anti-body having been destroyed by the heating process. It has been repeatedly observed that this error does occur, but not so often as weakly positive and indefinite degrees of hemolysis due to partial destruction of the syphilitic antibodies present.

After using both the Wassermann and Noguchi systems I am convinced that the latter gives a more sharply defined, reliable result, and since adopting the use of sensitized corpuscles, no longer have to deal with indefinite border line degrees of hemolysis.

Other advantages, convenience in using human rather than sheep's corpuscles and economy in time, work and materials, I only mention.

In conclusion, the technique of Noguchi may not be the best possible, but is certainly better than other modifications now in use, and a decided gain along the line of continuous improvement.

What shall we do in regard to this? Shall we sit supinely and watch this annual procession of our Georgia boys and girls wending their way along dark pathways to our State Academy for the Blind, or rather shall we not en masse put ourselves on record for the early adoption of a law and regulations which will gradually reduce blindness from this cause in Georgia, as it is doing in other states? A movement looking toward legislation of this nature has already achieved considerable headway.

THE PREPARATION OF SUBSTANCES FOR INTRASPINAL INJECTION IN SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.*

By Allen H. Bunce, A.B., M.D., Department Clinical Pathology, Emory University, School of Medicine; Pathologist Georgia Baptist Hospital, Scottish Rite Hospital, Atlanta, Ga.

Sufficient time has now elapsed since the introduction of intraspinal therapy in the syphilitic diseases of the central nervous system for conclusions to be drawn as to the value of such therapy. Also, a sufficient number of patients suffering from these diseases have been treated by numbers of physicians for conclusions to be drawn as to the indications, dangers and limitations of this method of treatment. Suffice it to say here that the verdict is on the whole distinctly favorable in suitable cases and intraspinal therapy has come to stay, because it has justified its use by the results obtained. However, in this as in any other method of treatment there are a number of important questions to be decided before treatment is undertaken and still others to be decided as treatment progresses. Among these are, first: In which class of patients is this form of treatment indicated? Second, which of the different forms of intraspinal therapy is best suited to the individual case or class of cases? Third, the amount of drug to be given, the intervals between doses, the number of doses, etc.

Of no less importance is the question of the substance to be used for intraspinal injection and its preparation. As has been suggested by Swift there are four preparations which have stood the test of time. These are (1) serum obtained from patients soon after the intravenous administration of a dose of salvarsan; (2) serum to which has been added a small amount of salvarsan; (3) neosalvarsan in minute doses, and (4) mercurialized serum.

(1) The first of these methods is usually called the Swift-Ellis method of intraspinal therapy because they originated this form of treatment. The technic of this method is as follows: (1) A full dose of salvarsan (.4 to

.6 gm.) is given intravenously. (2) A sufficient quantity of blood (30 to 40 c.c.) is withdrawn. (3) The serum is separated from this blood, heated to 56 C. for one-half hour, and diluted to 40 or 50 per cent with normal saline. (4) On the following day a lumbar puncture is made and after the withdrawal of 20 to 30 c.c. of spinal fluid the salvarsanized serum is injected in quantities of from 30 to 40 c.c. As originally described one hour was allowed to elapse before the withdrawal of the blood for the preparation of the serum; however, Dr. Swift has for the past two years curtailed this length of time to one-half hour. This is in accord with the findings of Sachs, Strauss and Kaliski, who have shown that practically no free arsenic can be demonstrated in the blood after 45 minutes. However, they were able to demonstrate from 0.00004 to 0.0001 gm. metallic arsenic per c.c. after an intravenous injection of .6 gm. of salvarsan during the first forty-five minutes. The diluted serum was first used because it was thought to be less irritating than the whole serum, but now 15 c.c. of whole heated serum is used by Swift with no greater reaction than with the older method. Swift and Ellis have shown that the serum has a definite spirocheticidal action, and that this action is increased by heating the serum to 56 C. for one-half hour. In reference to heating the serum they were able to demonstrate by an indirect method that the heat destroyed some inhibitory substance in the serum and that it also directly increased the action of the serum-salvarsan mixture. This is the basis on which this method rests; that is, that a definitely spirocheticidal substance may be injected so as to come in direct contact with the diseased tissues and which substance produces no bad effects on these tissues. Ehrlich has suggested that the heat breaks up a loose combination which has taken place between the salvarsan and some substance in the serum, thus setting free the salvarsan. This is the method which has been most widely used in America, because it has been considered less irritating to the patient.

(2) On account of the uncertainty as to the amount of salvarsan contained in the serum after the intravenous administration of the drug, Ogilvie advocated the addition of a definite quantity of salvarsan directly to the serum. His method of procedure is as follows: "50 c.c. of blood are drawn into a centrifuge bottle and centri-

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fused twice. To obtain the requisite amount of the drug old salvarsan is mixed in the usual way in the proportion of 0.1 gm. to 40 c.c. of fluid, care being taken not to over alkalinize; 0.4 c.c. of this solution is equivalent to 1 mg., and is taken as a standard for measuring the dosage. For this purpose a 1 c.c. pipette graduated in hundredths should be employed. The desired amount of salvarsan is added to from 12 to 15 c.c. of the serum, shaken to and fro to mix thoroughly and then placed in an incubator at 37 C. for one hour, after which it is inactivated for one-half hour at 56°C." With this method the amount of salvarsan that should be added to the serum is an important question for decision. Fordyce believes the limits of safety lie within 0.5 mg. He thinks it is better to begin with 0.25 mg. and gradually increase the dose according to the tolerance of the patient, especially as he and Ogilvie have noted bladder and rectal disturbances and numbness of the legs when more than 1 mg. of salvarsan was added to the serum. Swift also recommends that the dosage when employing this method should be 0.5 mg. and usually less. He has also shown, as had Gonder, that heating this mixture to 56°C. increases its spirocheticidal action. The chief objection to this method is the frequent unpleasant irritating effects.

(3) The method of introducing small quantities of neosalvarsan directly into the spinal canal was first used by Wechselsmann in 1912 and later by Marinesco. Their injections were given in aqueous solutions and produced profound reactions. These were probably due to a chemical meningitis. Later this method was revived by Ravaut who was able to demonstrate: (1) That an aqueous solution which was not isotonic could produce meningeal irritation, and (2) that an hypertonic concentrated solution could be tolerated even better than an isotonic solution. This was on account of the fact that the hypertonic solutions are not easily diffused. Therefore, he used concentrated hypertonic solutions of neosalvarsan in the spinal canal. Udo J. Wile has been the principal advocate of this method in America. The following is the method used by Dr. Ravaut as described by Wile: "An ampule containing 0.3 gm. of neosalvarsan is dissolved in 5 c.c. of freshly distilled water. If the ampule contains 0.6 gm. 10 c.c. of water are used. In both solutions each drop will contain 3 mg. of the drug. The syringe em-

ployed for the injection is accurately graduated in drops. The patient is then placed in a position for a lumbar puncture, either lying or sitting, according to the choice of the operator. The puncture is then made with a needle, the end of which fits the graduated syringe. After a few drops of spinal fluid have flowed out of the cannula, or a greater quantity if a diagnostic puncture is desired at this time, the syringe is fitted back into the needle and the fluid is allowed to run back into the syringe barrel, thus mixing with the amount of the drug in the barrel. The mixed spinal fluid and drug is then gently forced into the canal, and slight suction is made on the syringe to withdraw a second amount of fluid, which washes out the needle. This is then reintroduced, the needle withdrawn and the patient placed in the Trendelenburg position, in which position he is allowed to remain at least one hour." As in the previous method here also the amount of drug used bears a direct ratio to the intensity of the reaction following the injection. Ravaut recommended from 3 to 12 mg.; however, the large doses have frequently been followed by incontinence of urine, rectal paralysis and other unfavorable symptoms. Gennerich has been able to avoid these unpleasant symptoms by using very dilute solutions. He thinks 0.5 mg. the maximum dose in spinal cord diseases and not over 1 or 2 mg. in patients with paresis or syphilitic meningitis. Swift thinks that repeated doses of this size are dangerous. Wile states that cases of cerebro-spinal syphilis other than tabes or paresis have done decidedly better than those in which either one or both of these two conditions have been present. He states that cases of tabes without bladder or rectal symptoms have done especially well. Furthermore, he thinks that the presence of bladder or rectal symptoms are contraindications in this method. He, too, favors very small doses of the drug.

(4) In 1913 Byrnes advocated the use of mercurialized serum intraspinally. His serum was prepared by the addition of bichloride of mercury to the patient's serum, thus forming albuminate of mercury. Essentially his method is as follows: (1) About 40 c.c. of blood are drawn into dry sterile centrifuge tubes and the serum is separated from the clot. (2) One c.c. of a solution containing one-fiftieth of a grain of bichloride of mercury is added to the serum. (3) This is heated to 56°C. for one-half hour.

(4) A lumbar puncture is made and spinal fluid is withdrawn until the pressure registers 30 mm. or less. (5) The prepared serum is injected by gravity at body temperature. (6) The patient is kept in bed and the foot of the bed elevated six or eight inches for one-half hour longer. One of the chief advantages of this method is that a sufficient quantity of serum may be prepared at one time for a number of subsequent injections since this serum keeps perfectly well in sealed glass ampules. The dosage usually employed in this method is one-fiftieth to one-twenty-fifth of a grain of bichloride (1.3 to 2.6 mg). Rather striking results have been reported by a number of observers following the use of this serum. However, the amount of mercury introduced must be kept sufficiently low to prevent irritation, the size of the dose, therefore, would depend somewhat upon the frequency of the injections. Personally, I have given as much as one-tenth of a grain without any unfavorable symptoms, but of course this could not be repeated often. My own experience with this method leads me to believe that better results are obtained by the use of pure human serum to which the bichloride has been added than by the use of serum that has been greatly diluted with salt solution. Furthermore, I have seen some beneficial effects from the use of serum alone. This has been noted by Swift.

My own experience is based upon the preparation and administration of more than 200 doses of salvarsanized and mercurialized serum. The method I have used in preparing the salvarsanized serum is based on the Swift-Ellis technic: (1) The patient is given a purgative the day preceding the intravenous injection. (2) He is instructed to eat a very light breakfast with no milk or cream and if the dose of salvarsan is to be given in the afternoon the same applies to the noon-day lunch. The reason for this is so that I may obtain a clear serum free from the products of digestion. This rule was adopted because serums having a milky appearance were obtained in a few instances after the patient had eaten a full meal and it was noted that the reactions were much more severe after the injection of such serums. (3) .4 to .6 gm. of salvarsan are given intravenously in from 100 to 120 c.c. of salt solution. (4) In from 20 to 30 minutes, 40 to 60 c.c. of blood are drawn into dry sterile tubes. It is very important that the tubes be ster-

ilized by dry heat or at least should be perfectly dry before being used because if this is not insisted upon a clear, hemoglobin-free serum can not be obtained. (5) The blood is allowed to remain at room temperature for one or two hours after which a nichrome wire is run around the inside of the tube so as to separate the clot from the sides of the tubes. I use a nichrome wire for this purpose because it is stiffer than the usual platinum loop and, therefore, serves the purpose better. If the serum does not begin to separate well from the clot at room temperature in one or two hours it is advisable to place the tubes in the incubator for a short time, as this will hasten coagulation. The blood should never be placed in a refrigerator until the serum has begun to separate from the clot, since cold retards clotting. (6) The serum which is still in contact with the clot is placed in the refrigerator over night. This is an important step in the procedure since it has been shown by Swift that the heated serum of salvarsan-treated patients is more spirocheticidal when it has been in contact with the clot overnight than when it has been separated immediately after coagulation. (7) Upon the following morning the serum is pipetted off and put into sterile centrifuge tubes and centrifuged for a sufficient length of time to throw down any corpuscles which may be present. If this routine is followed a perfectly clear hemoglobin-free serum will be obtained and this is a very important point in avoiding the reactions which sometimes follow the administration of the serum. (8) The serum is now heated in a water bath to 56°C. for one-half hour, since this renders the serum more spirocheticidal. (9) The serum is now ready for intraspinal injection. It may be given pure or may be diluted with normal salt solution. If it is diluted the normal salt solution should be prepared from freshly distilled water. Usually the first injection is diluted down to 40 to 50 per cent and if this is well tolerated the succeeding injections are diluted less until shortly the patient is receiving pure salvarsanized serum.

Most frequently the salvarsan is given and the blood withdrawn in my office and the patient is sent to the hospital the following day to receive his intraspinal injection. A lumbar puncture is made between the third or fourth and fifth interspace and from 20 to 30 c.c. of spinal fluid are withdrawn. Not infrequently it stops flowing before this

much is obtained and the serum after being heated to 99°F., or approximately the temperature of the spinal fluid is injected slowly by the gravity method. The patient is usually able to leave the hospital in from 12 to 24 hours.

My experience with mercurialized serum has been limited to 30 injections. The technique here is identical with that given above. The greater number of these have been prepared by me, but I have given several injections of mercurialized serum prepared by Mulford without bad results and without any symptoms of anaphylaxis. I prefer the serum prepared for each individual case from his own blood, but think Mulford's of especial value to those who are not accessible to facilities for the preparation of their serums.

Finally, in more than 250 lumbar punctures no instance occurred of a "drop tap," and in the above 200 injections no infections have occurred. Several rather severe reactions occurred in the early cases on account of giving a cloudy serum or one which contained hemoglobin or where the serum was not given at the proper temperature. The worst result was paralysis of the bladder in one case of paresis following his seventh injection.

In conclusion, in the words of Swift, "The objects of therapy are three-fold: (1) the cure of the disease; (2) the amelioration of symptoms; (3) the prolongation of life. With the possible exception of paresis all of these objects may be obtained in most cases of syphilis of the central nervous system. To be satisfied with the attainment of the last two without attempting to obtain the first is to fail to apply all the means at our disposal."

I wish to thank the following gentlemen without whose co-operation and kind indulgence this work could not have been done, as the patients treated were their patients:

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INTRASPINAL THERAPY IN SYPHILITIC DISEASE OF THE NERVOUS SYSTEM.*

By Lewis M. Gaines, M.D., Professor of Clinical Neurology, Medical Department, Emory University, Atlanta, Ga.

One of the most important advances in knowledge in recent years in the domain of medicine has been the accumulation of evidence that syphilis is responsible for many types of nervous diseases, some of which are extremely diverse in their clinical manifestations, so that a large group of diseases of the nervous system are to be regarded as varying manifestations of the ravages of the spirochaeta pallida. A list would include such clinical entities as tabes, paresis, many cases of combined lesion of the spinal cord, many cases of myelitis, encephalitis, certain brain tumors, various types of peripheral paralyses, many cases of epilepsy, and many cases presenting an array of symptoms, usually classified as neurasthenia. In addition, many of the psychoses, such as mania, melancholia, dementia precox, are really types of syphilis. One must conclude, therefore, that the safe thing to do in any case presenting symptoms whose etiology is not

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clear, is to have a Wassermann test made on both the blood and spinal fluid.

It is thus evident that in a large number of the nervous diseases, we are really dealing with a single efficient cause, and that our therapeutic endeavors must be directed against that cause. When salvarsan was first introduced by Ehrlich in 1909, it was hoped that we had found a sterilizing agent which would destroy spirochete anywhere in the body. It was soon found, however, that the drug was not a panacea for syphilis. Some of the cases of syphilis of the nervous system were apparently cured, or vastly improved by its intravenous administration; others showed no encouraging responses. It seemed reasonable to conclude that these failures might be due to the fact that the drug failed to penetrate to infected localities. Investigators began to devise more efficient methods to secure such penetration, and keeping in mind the brilliant results of intraspinal treatment in meningitis, there developed different ways of administering substances intraspinally for syphilis. In 1912, Swife and Ellis began the use of salvarsanized serum; in 1913, Ogilvie prepared in vitro, a serum of known salvarsan content, which could be safely administered intraspinally; in 1914, Ravaut injected neosalvarsan directly into the spinal canal, and the same year Byrnes introduced the use of mercurialized serum. More recently intracranial methods of administration have been advocated. Cotton states that after considerable experience with salvarsan, diarsenol, and mercurialized serum given intraspinally in cases of paresis, he has now adopted a method of intraventricular injection, which he considers more effective than any of the earlier methods. Such a method he considers overcomes anatomical impediments, such as adhesions at the base of the brain, which in using the intraspinal route may prevent the serum from reaching the cortex. Furthermore, he can give larger amounts of salvarsan into the ventricle, even as high as 1 mg.

Method of Administration.

The patient should be put to bed for the reception of the intraspinal medication. After introducing the needle into the spinal canal, at least 30 c.c. of spinal fluid should be allowed to gradually escape, and the serum introduced slowly by gravity. In a brain case, it is advisable to lower the head after the injection for twelve hours. In the

cord cases, the patient should be horizontal. Leg pains are not nearly so severe if the head is lowered, but the effort always is to secure contact with the infected areas by the help of gravity. Usually there is complaint of discomfort in the legs. In tabes cases, severe lancinating pains appear one or two hours after treatment, and continue 10 to 12 hours gradually diminishing in severity. Codein sometimes mitigates, but does not stop these pains. Frequently I have used morphine for their relief, and have seen no unpleasant results, contrary to the experience of some observers, who have reported alarming respiratory difficulties. The patient should be kept in bed 24 hours after injection. Injections may be repeated every ten days or two weeks.

Results.

Within the past month I have received a number of letters from experienced observers in various parts of the United States, in response to inquiries sent them as to their opinions regarding the use of intraspinal medication in syphilitic disease of the nervous system. Time forbids extensive quotation from all of the replies which I have received, but the following opinions may be taken as representative:

Alfred Gordon, of Philadelphia, bases his conclusions on 212 cases, which he has treated during the past 18 months. The only unfortunate reactions he has observed has been headache in a few cases. He has had the best results in cerebral syphilis. He feels that mercury should be used in the intervals between intraspinal treatments. He finds that the serological improvement is not parallel with the clinical.

Ball, of St. Paul, prefers the indirect method—that is, salvarsanized serum. With this method he has had practically no disturbances. His best results have been in cases of tabes. In his experience the four reactions have tended to become negative in cerebrospinal cases, but not in tabes. He feels that the value and efficiency of intraspinal medication over other methods is still to be decided. At present his plan is to use the other methods first, and then if satisfactory improvement is not obtained, to give a series of intraspinal treatments.

Joseph Collins, of New York, prefers the direct method of intraspinal salvarsan administration, and has seen no unfortunate reactions, barring slight aggravation of

symptoms complained of and lasting a few hours. He has not observed cases thoroughly treated intravenously, and unimproved, but improved by intraspinal treatment. His custom is to give the intraspinal treatment where the cell count in the spinal fluid is high. Except in paresis, and in so-called Wassermann-fast tabes, the serological reactions have all become negative, and Collins regards intraspinal therapy in conjunction with intravenous administration of salvarsan a valuable and efficacious method of treatment of syphilis of the nervous system.

Riggs, of St. Paul, who has given fully 1,000 intraspinal injections, prefers the Swift and Ellis method. He has seen no serious reactions following the treatment except one case of irritative meningitis, which subsided favorably. He has noted satisfactory improvement by the intraspinal method after the intravenous use of salvarsan had proven inefficient. He has found that cerebrospinal syphilis gives the best response, although in 75 per cent of his cases of tabes, the reactions in the blood and spinal fluid have usually become negative. He found the serological improvement kept pace with the clinical, although some Wassermann-fast tabes cases have appeared well clinically. He feels that there is absolutely no question as to the efficacy of intraspinal medication, and as far as his experience goes, he knows of no better form of treatment.

Barker prefers the Swift and Ellis method. He notes that sometimes there is severe pain after injection, but mentions no other unfortunate reactions. The best results in his experience have been seen in cases of cerebrospinal syphilis, and tabes. Temporary improvement only has been secured in paresis. In some of the cases treated, the four reactions have become negative, but some are Wassermann-fast. He feels that in many cases of central nervous system syphilis, intravenous therapy suffices, but in old and resistant cases intraspinal therapy is really helpful.

Brem, of Los Angeles, gives intravenous injections of salvarsan until the limit of improvement is reached symptomatically and serologically. Ten to twenty-five per cent of his cases have failed to clear up by intravenous injection, and these have been subjected to the Ogilvie method of intraspinal medication. If this fails mercurialized serum is used. He feels that any method should be pushed to the point of tolerance,

and that poor results are often due to the failure of physicians to realize how frequently treatments should be given. He quotes one parietic, given 22 treatments of mercurialized serum intraspinally in almost as many weeks, and finally the cerebro-spinal fluid became normal. He has also seen cases in which the limit of improvement by intravenous treatment has been reached, but which responded by further improvement to intraspinal methods. He finds the tabetic type responds best. He concludes that intrathecal therapy is a valuable adjunct in the treatment of these cases, but that they should be vigorously attacked intravenously also (once or twice weekly).

Ogilvie prefers the method originated by him. In approximately 3,000 injections, he has had but one unfavorable reaction of a permanent character. In tabetics, in about 5 per cent, there is an intensification of the characteristic shooting pains. In paresis and cerebro-spinal syphilis, 95 per cent suffered no reaction; in 5 per cent there may be temporary headache, nausea, and pyrexia. He has observed a very large number of all types of neurological syphilis that failed to improve under the most intensive intravenous treatment, but which rapidly improved as soon as intraspinal therapy was instituted. He feels that all types respond to treatment, provided it is instituted before there has been destruction of nerve tissue. As a rule, however, early tabes and cerebrospinal syphilis respond best. He has found that in early tabes, the four reactions can be permanently eliminated. In late cases, cell and globulin content are more rapidly reduced to normal than the Wassermann in blood or spinal fluid. He concludes that provided proper care is exercised in the preparation and administration of serum, and in the after care of the patient, intraspinal therapy is capable of producing results impossible of attainment by other methods, either singly or combined.

My personal experience in the use of intraspinal therapy extends over a period of three years, and has been practically limited to the use of the Swift and Ellis method. The results obtained in approximately 100 injections as compared with other methods of treatment in a total of 70 cases of neurological syphilis have led me to conclude that in intraspinal therapy properly administered, we have a safe and valuable means of combatting cases of neurological syphilis,

many of which will respond to no other method of treatment.

Conclusions.

The cases of neurological syphilis which are benefited are the early cases of no matter what type. As a rule, those showing meningitic involvement as evidenced by high cell count and globulin content have a better prognosis. The majority of the responses to my inquiries consider paresis the least amenable to treatment with the notable exception of Cotton, who has had a very large experience with this disease, and whose optimistic opinion concerning it is entitled to corresponding consideration.

Practically all observers of experience agree that intraspinal therapy is practically free from danger, when due care is exercised in the preparation of the serum, in the technic of administration, and in the after care of the patient. From a personal correspondence with a number of observers, who have given a total of fully 10,000 intra-spinal injections, I have learned that only two or three unfavorable reactions have occurred.

There are now in vogue, three principal methods of intra-spinal therapy: The Swift-Ellis method, the Ogilvie method, and the use of mercurofused serum. Each method has its advocates, but the general trend of opinion seems to be in favor of the Ogilvie method. Good results are being obtained by all methods. The method of intraventricular therapy using serum prepared by Ogilvie's technic is reported only by Cotton and used by him in paresis. This method should merit much interest, and promises unusually good results.

What cases of neurological syphilis should be given intraspinal therapy? Many workers of experience use it only when other methods fail; others, including the writer, feel that valuable time may be saved by using the method from the beginning in tabes, and paresis, while in other types frequently repeated doses of intravenous salvarsan with mercury and iodide should first be tried.

What influence has intraspinal therapy on the high cell count, increased globulin content, and Wassermann of the spinal fluid, as well as on the Wassermann in the blood? Provided the method is used early, energetically and frequently, these four reactions may be rendered permanently negative in many early cases. However, in quite a con-

siderable number the Wassermann remains positive, though the cell count and globulin content are reduced to normal. Even in the presence of a positive Wassermann there is frequently clinical improvement or apparent cure, so that the serological improvement may or may not run parallel with the clinical improvement. It might be said, however, that where the cell count remains high, clinical improvement is very slight.

How frequently should this intraspinal treatment be given? We have not recognized until lately the importance of long and frequent treatment in syphilis generally, but especially in neurological syphilis. Noguchi has shown that salvarsan is far more effective if given in a series of rapidly repeated injections than if given at long intervals, in which case there is developed an actual resistance to the drug. Those with the most extended experience now advocate intraspinal injections every one to two weeks or the intravenous injections once or twice a week, until the four reactions become negative. One should not conclude that a case is Wassermann-fast until a prolonged trial of from 10 to 20 injections.

In conclusion, it must be distinctly emphasized that the early cases of syphilis of the nervous system are the hopeful cases. Nerve tissue which has been destroyed by the syphilitic toxin cannot be revived. When the cases are early there is frequently only an inflammation of the meninges, leading to thickening irritation, and the formation of an exudate. In some of the cases gummatous formation occurs. In such cases it is that brilliant results may be expected. In many of the cases, there is very little clinically to suggest syphilis as a cause. It is well to bear in mind the possibility that the spirochete may be responsible for neurological disturbance of every character.

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Dr. W. E. McCurry, Councillor.

PROGRAM.

Session of the Eighth District Medical Association

**Being Entertained by
The Walton County Medical Society
Session Opened at Court House
at 10:30 a. m., August 15th.**

Opening Prayer.....Dr. D. W. Key

Address of Welcome for City of Monroe
Former Mayor A. B. Mobley

Address of Welcome in behalf of the Walton
County Medical Society
Dr. J. A. Perkle.

Response to Addresses of Welcome
Dr. I. H. Goss, Athens.

Executive Session—Papers.

“Pneumonia”

Dr. A. C. Holliday, Athens

(Subject to be announced)

Dr. Stewart Brown, Royston.

“The Luetin Reaction”

Dr. James K. McClintie, Monroe.

Carel-Dakin Solution

Dr. W. D. Travis, Covington.

“Cholecystitis”

Dr. J. P. Proctor, Athens.

“Cardiac Lesions”

Dr. W. E. McCurry, Hartwell.

“Are We Equal to the Responsibility of
the Physician?”

Dr. J. C. McKinney, Athens.

Election of Officers.

Georgia Barbecue.

Given by Walton County Medical Society.

OFFICERS.

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Dr. E. M. Coleman, Sec-Treas.....Athens

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Dr. D. H. Deupree.....Athens

Dr. C. N. Sisk.....Athens

Dr. W. E. McCurry.....Hartwell

Dr. Stewart Brown.....Royston

Dr. E. M. Coleman, ex-officio.....Athens

Dr. S. S. Smith, ex-officio.....Athens

Reception and Entertainment Committee.

Dr. T. R. Aycock.....Monroe

Dr. H. B. Nunnally.....Monroe

Dr. P. T. Reynolds.....Monroe

Dr. O. N. Pendergrass.....Monroe

Dr. G. R. Wells.....Monroe

AMERICAN WOMEN'S HOSPITALS.

The War Service Committee of the Medical Women's National Association has organized the American Women's Hospitals for work at home and abroad. The Surgeon-General of the Army and the General-Director of the Department of Military Relief of the American Red Cross have approved the provision made for service to the army and to the civil population. The work will be officially part of the medical and surgical service of the American Red Cross.

The scope of the plan is a broad one. It includes units for maternity service and village practice in the devastated parts of the Allies countries and hospitals run by women for service there as well as for the United States Army in Europe. In this country acute and convalescent cases will be treated in hospitals equipped for the purpose; soldiers' dependents will be cared for, interned alien enemies will be given medical aid and substitutes will be provided to look after the hospital service and the private practice of physicians who have gone to the front.

The first units hope to go to France and to Serbia in the early fall.

Headquarters have been established at 637 Madison Avenue, New York City. Dr. Rosalie Slaughter Morton is chairman of the War Service Committee.

The Editor of this Journal has enough interest in his own property, to lead him to quote the Journal to advertisers, and to trade with advertisers. The patronage of the medical profession is well worth while for any advertiser to cultivate. Advertising does get results in this Journal. Why not make the fact more evident by calling attention to it? Why let advertisers complain that they are not receiving the expected patronage, when each reader has only to note the Journal advertisements in ordering?

THE JOURNAL

OF THE

Medical Association of Georgia

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SINGLE COPIES of this calendar year 15 cents; of the previous calendar year, also 15 cents; two years old, 20 cents; three years old, 25 cents; in other words, 5 cents additional is charged for each year preceding the last calendar year.

REMITTANCES should be made by check, draft, registered letter, money or express order. Currency should not be sent unless the letter is registered. Stamps in amounts under one dollar are acceptable.

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Advertising forms go to press eight day in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the council. Advertising rates will be sent on request.

CONTRIBUTIONS

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors should have their contributions typewritten—double space and with ample margin—before submitting them. The expense is small to the author—the satisfaction is great to the editor and printer. We cannot promise to return unused manuscript, but try to do so in every instance. Manuscript should not be rolled or folded.

ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

A CRITICAL SITUATION.

The Government is raising an immense army of volunteers and conscripts to carry on the war to a successful and, we hope, an early termination.

Every army must be supplied with a personnel of medical officers of adequate number and well trained. While provisions have been made to raise the required number of men for the fighting force, it has been left to members of the medical profession of this country to come forward voluntarily, seeking commissions in the Medical Reserve Corps.

Only a few of the total number required have applied for commissions. This means that unless immediate action is taken by the profession voluntarily, the men in the army now being organized will be without

sufficient medical care. Such a condition would be more than critical and dangerous for the success of our army and the cause in which we are enlisted. The medical officer plays a most prominent part not only in keeping the army on its feet and physically fit for fighting, but in returning to the ranks a large percentage of those who have been temporarily put out through casualties.

How soon will the medical profession of the United States as a whole wake up and realize that doctors must come forward and volunteer their services to the Government?

In civil life, when great casualties occur, the doctor readily offers his services and usually is the first on the scene to save human life. How much more important is it, then, that in this critical situation, he should come forward and offer his valuable aid to preserve not only human lives, but the life of the nation itself?

In round numbers, there are about 150,000 physicians listed in our medical directories. Deducting from this number 50,000 names of those who are not in practice or are physically incompetent, there are 100,000 doctors that should be available. Of this number the Surgeon General's Office requires 20,000, or one-fifth of the active practitioners, as officers in the Medical Reserve Corps of the United States Army.

The unfounded and possibly maliciously circulated reports of the casualties among the medical profession in the armies abroad have deterred many from applying for commissions. In reality the number killed on the Western front from the beginning of the war to June 27, 1917, a matter of three years, was 195.

The lowest commission offered a doctor is First Lieutenant, which draws in pay \$2,000 a year; Captains receive \$2,400 and Majors \$3,000. The cost of equipment is about \$150 to \$175, according to the desires of the individual. As in civil life, some of us are satisfied with a \$25 suit of clothes while others pay \$50 and this applies to a medical officer in purchasing his outfit in the way of uniforms, blankets, etc.

The individual outlay when once in the service is principally your expenditure for food, or mess as it is called in military circles, and this will average about \$25 a month, or about \$300 a year, meaning that a First Lieutenant should have at the end

of the year, or to send home to his family or bank, about \$1,700, a Captain about \$2,000 and a major at least \$2,500.

While this information is of interest to those contemplating applying for commissions in the Medical Reserve Corps, the fact remains that in America we have more than a sufficient number of doctors to adequately supply the demand of the Surgeon General's office without hardship to the civilian population.

The need of doctors is not alone for the mobile army, but also in Concentration Camps, Exacuation Hospitals, Base Hospitals and on Transports. It is of decided advantage to volunteer your services and receive the benefit of the very necessary training accorded physicians in medical training camps. It is a safe assumption that for those who receive such training and show their aptitude for the service, advancement will be rapid.

Applications for commissions in the Medical Reserve Corps will be sent to you by the Editor of this paper. Apply for your commission now. Your country needs you.

PROPAGANDA FOR REFORM.

Some Misbranded Nostrums.—The following "patent" medicines have been found misbranded under the Federal Food and Drugs Act, chiefly because the therapeutic claims made for them were misleading and false: Quaker Herb Extract, a water alcohol extract of an emodin-bearing drug. Payne's New Discovery, a water alcohol solution containing small amounts of baking soda, licorice and extractive matter from a laxative plant drug. Payne's Quick Relief, chiefly turpentine with cayenne pepper, resin, camphor and chloroform. Quaker Oil of Balm, containing turpentine, cayenne pepper, chloroform, etc. Cooper's New Discovery, a nostrum of the alcohol tonic type, containing 20 per cent alcohol, some emodin, aloe and a small quantity of oil of sassafras together with reducing sugars. Cooper's Quick Relief, a liniment consisting of cayenne pepper in alcohol (31 per cent) flavored with oil of sassafras. Wilson's Preparation, a powder containing largely starch, acacia and sugar with potassium acetate, calcium hypophosphite and quinine. (Jour. A. M. A., July 7, 1917, p. 58-59.)

Venarsen.—William A. Wilson, Kansas City, Mo., writes that he has advised the Intravenous Products Company that after using a great quantity of Venarsen, he can see no more effect on the cases treated than if so much water had been administered, and that this is also the report of Don R. Black, pathologist for Bell Memorial Hospital, Uni-

versity of Kansas (Jour. A. M. A., July 7, 1917, p. 62).

Triner's American Elixir of Bitter Wine.—The Council on Pharmacy and Chemistry reports that this is a wine to which bitter drugs and laxatives have been added. Though evidently intended for public consumption, it is also advertised to physicians. The composition of this "wine"—some bitter drugs, a laxative and a tannin—containing constipating red wine—and the advertising propaganda all tend to the continued use of this alcoholic stimulant and thus to the unconscious formation of a desire for alcoholic stimulation. As the medical journal advertisements may lead physicians to prescribe this secret and irrational preparation and thus unconsciously lead to alcoholism, the Council authorized publication of its report. (Jour. A. M. A., July 14, 1917, p. 139.)

Some Misbranded Nostrums.—The following "patent" medicines have been found misbranded under the Federal Food and Drugs Act. The curative claims made for them were misleading, unwarranted and false: Poland Wine Bitters, a wine to which emodin-bearing and other drugs had been added. Koenig's Nerve Tonic, claimed to be a natural remedy for epileptic fits, etc. Mrs. Edward's Infant Syrup, a "baby killer," containing morphin and alcohol. Root Juice Compound, which was not a root juice. (Jour. A. M. A., July 14, 1917, p. 139.)

The Crucial Test of Therapeutic Evidence.—Tordald Sollmann points out that if a patient improves after taking a remedy we do not know that he improved on account of the remedy or as a result of the natural course of the disease or for other reasons. In order that adequate allowance may be made for the natural course of the disease, clinical trials of a medicament should be carried out in one of two ways. The first is the statistical method in which alternate patients receive or do not receive the treatment. This method is usually of value only when a large number of cases are available, and even then it is limited or doubtful because it can not take sufficient account of the individuality of cases. The second method consists in the attempt to distinguish unknown preparations by their effects. In this a patient, or a series of patients is given the preparation which is to be tested, and another preparation which is inactive, or a preparation the effects of which are to be compared with the first. In either case the investigator does not know when he is giving one or the other, and tries to distinguish them by their effects. If one drug is really of value and superior to the other, this "blind" test will surely bring out such efficiency or superiority. (Jour. A. M. A., July 21, 1917, p. 198.)

Tumors in Anilin Workers.—Long exposure appears to result sometimes in the development of tumors of the bladder, with or without the symptoms of chronic anilinism. In Germany many such cases have been observed in past years. At the first

sign of trouble with urine or bladder in anilin workers, the advisability of careful cystoscopy should be considered. (Jour. A. M. A., July 21, 1917, p. 204.)

Low's Worm Syrup.—The A. M. A. Chemical Laboratory reports that Low's Worm Syrup, sold by Smith, Kline & French Company, Philadelphia, contains 0.93 gm. santonin per 100 cc., or 4.2 grains per fluid ounce, and a laxative drug, probably sena. Each drachm (teaspoonful), therefore, contains a little more than one-half grain. The preparation, like so many of the worm syrups on the market, is of the usual dangerous santonin-containing type, although no hint is given of the presence of this drug nor any warning that it contains a poison. (Jour. A. M. A., July 21, 1917, p. 225.)

Redintol.—This is a paraffin mixture for the treatment of burns. It is marketed by Johnson and Johnson, New Brunswick, N. J., with the following statement of composition "Paraffines 95 per cent combined with Resina Palaquium and Oleum Picis Liquide." This means little and probably was so intended. Oleum picis liquide is oil of tar and resina palaquium is gutta percha. Simple paraffin would no doubt answer as well as this secret mixture. (Jour. A. M. A., July 28, 1917, p. 306.)

More accurate and definite statements of the occupations of decedents should be written upon death certificates. Until this is done mortality statistics by occupations will continue to be unsatisfactory.

The Bureau of the Census is planning for the near future a monograph on tuberculosis. How much more valuable this monograph will be if it is possible to show accurately the occupations of decedents.

As a physician you appreciate the importance of such statistics. As a physician you are by education better qualified than the ordinary informant to understand a proper statement of occupation.

Will you not, therefore, take pains to see that the occupation items upon each one of your death certificates are properly supplied?

The National Board of Medical Examiners held its second examination in Washington, D. C., June 13th to 21st. There were twenty-four qualified candidates, twelve of whom appeared for examination, the others having been ordered into active duty between the

time of their application and the date of the examination. Of the twelve who took the examination nine passed.

The next examination will be held in Chicago, October 10th to 18th. The regular Corps of the Army and Navy may be entered by successful candidates, without further professional examination, providing they meet the adaptability and physical requirements.

There will also be an examination in New York City in the early part of December.

It will be the endeavor of the Journal office to collect all news items of district interest and publish them in their appropriate column. However, the size and interest of each district column will depend on the Councillor primarily. If you are not satisfied with the space your district receives, or with the news ascribed to it, go after your Councillor. We want news. If there is none to be had, the fault is not ours. But there is news of medical interest in every county. Send it in. See at the head of the scientific section who is your councillor, and send him news. And we shall be glad to receive letters on current topics if they are written to the point concisely and have something to say.

The more money The Journal of the Medical Association of Georgia makes out of its advertisements the less it costs the State Association to run the paper. This means that every member of the State Association has an interest in the advertising columns. If one business firm advertises and another does not, patronize the one that does. It is money in your pocket.

An advertisement in The Journal of the Medical Association of Georgia will bring results. Rates sent on request.

DO YOU KNOW THAT

Idleness is the thief of health?

BIG INCREASE IN NUMBER KILLED BY AUTOMOBILES.

Insurance Study Shows Increasing Menace of the Automobile—Children the Main Victims.

The startling fact that the death rate from automobile accidents has more than tripled since 1911 is disclosed by a study of the deaths among the industrial policyholders of the Metropolitan Life Insurance Company. In 1911 the death rate from this cause was 2.3 per 100,000; in 1916 it had increased to 7.4. During this period the rate for each year was markedly higher than the rate for the year before, and that for 1916 showed an increase of more than 37 per cent over the figure for 1915.

Nearly One-third of Those Killed Are Children Under 10 Years of Age.

The steadily climbing death rate from automobile accidents among the families of the country's wage-earners is due, very largely, to fatalities among little children. This investigation has developed the fact that of the 2,507 policyholders who were killed by automobiles during the six years 1911-1916 no less than 790, or about 32 per cent, were children under 10 years of age, and 1,125, or over 44 per cent, were children under 15 years of age. Unless something is done to check automobile fatalities, the time is approaching when the automobile as an instrument of death among children will become as serious and dreaded a factor as some of the deadly epidemic diseases upon which the attention of health authorities has long been centered. There has been in recent years a marked decrease in the death rate from such diseases as measles, scarlet fever, whooping cough and diphtheria, but the rate for automobile accidents (surely as preventable a cause of death as any of these) is increasing by leaps and bounds.

Mortality Caused by Automobiles and by Other Vehicles Compared.

Another condition developed by this study is the fact that as far as the industrial population is concerned, more deaths are caused by automobiles than by surface cars, subway trains, elevated trains, bicycles and horse-drawn vehicles combined. Indeed, in 1916 the 756 deaths caused by automobiles approaches very closely the 799 persons insured in the company killed on steam railroads.

The figures for Metropolitan policyholders, it must be borne in mind, represent, almost exclusively, pedestrians, rather than those who ride in the machines. This is particularly true of the children. A large part of this mortality, it is evident, is due to reckless driving and to the heedlessness of children to the dangers to which they expose themselves. But whatever be the cause, it is clear from these figures that the automobile is an important agency of death and that its control by the communities must be immediate and thorough if improvement is to be made.

WORK WITH HOOVER AND SERVE OAT FOODS.

To sustain our Allies and our own army abroad it is necessary for this country to ship to Europe 200,000,000 bushels of wheat the coming year, in place of a normal shipment of 80,000,000 bushels. That is why Herbert Hoover says we must eliminate waste of bread and must have one "wheatless" meal each day. It is impossible to view this matter as other than a patriotic duty.

Yet the domestic housewife must look to the matter of serving nourishing meals.

An excellent food to consider as a flavory, nutritious, and easily prepared substitute for bread is oats, either in the form of oatmeal or oatmeal biscuits. As a food that imparts vim, energy and endurance, oats have long been recognized as supreme. And in the form in which they can in these days be procured for table use, they excel nearly every other grain food in flavor and ease of preparation.

It has been estimated by food experts that oats, to the extent that they are used in place of other foods, on the table, represent a lower cost by 75 per cent, on the average, than what they take the place of.

A few specific comparisons may be interesting to the reader:

Per unit of nutrition, bacon and eggs cost five times as much as oatmeal, steak and potatoes cost five times as much, chicken costs six times as much, the average mixed diet four times as much.

In view of the critical food situation and the comparatively low cost of this superior food, the housewife, it appears, would do well to serve oats more often.

During Infancy and Childhood it is important but difficult to keep the bowels in order. It can be done by the continued use of

Liquid Petrolatum Squibb **Heavy (Californian)**

It is pure and safe, tasteless and odorless. Because it is neither a laxative, a cathartic, nor a purgative, but a perfect mechanical lubricant, is not absorbed by the system and does not disturb digestion, it may be given indefinitely in any necessary quantity. Thus it prevents intestinal toxæmia, restores normal action of the bowels, and aids in maintaining normal nutrition. Especially valuable for young patients during the summer and autumn months.

To be had at all drug stores in original one-pint packages under the Squibb label and guaranty.

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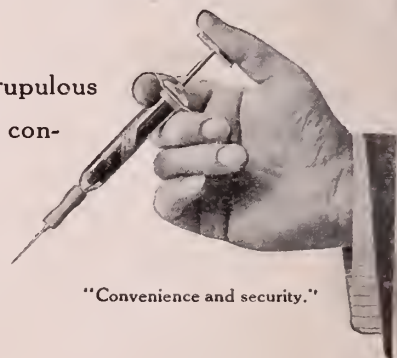
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CONCENTRATED Antidiphtheric Serum (GLOBULIN)

SUPPLIED IN SYRINGE CONTAINERS.

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THE JOURNAL

OF THE

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VOL. VII.

AUGUSTA, GA., OCTOBER, 1917.

No. 6

JUST OUT

Norris & Landis' Chest Diseases

Parts I and II take up the actual *methods* of diagnosis. In the section on inspection, the normal with its variations is contrasted with the pathologic contour, size, color, and other physical characteristics; and you are trained both to *see* and *interpret*. Palpation is gone into very thoroughly on account of its peculiar value in detecting certain conditions. The chapters on percussion cover 50 pages, giving you theory, factors, actual technic with directions for strokes, and significance of findings. Auscultation is also treated very completely, normal and abnormal breath and voice sounds being fully considered.

Parts III and IV take up the diagnosis of the diseases of the bronchi, lungs, pleura, diaphragm, pericardium, heart, and aorta by means of the four methods. Every disease of these organs is considered, and each symptom carefully analyzed. The 85-page section on tuberculosis is a monograph covering every manifestation of this disease. The detection of incipient tuberculosis is particularly strong. Among the prominent features of the work are the sections on the physical findings in infants and children, the bearing of industrial factors on the etiology and symptomatology of disease, and the military "gassing."

Octavo of 782 pages, with 413 illustrations, 5 in colors. By GEORGE WILLIAM NORRIS, A.B., M.D., and H. R. M. LANDIS, A.B., M.D., Assistant Professors of Medicine at the University of Pennsylvania.

Cloth, \$7.00 net; Half Morocco, \$8.50 net.

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Confidence in the therapeutic utility of the *Bacillus Bulgaricus* has been fairly won under actual clinical use.

This peculiarly energetic microbe as contained in pure and vigorous culture in the Fairchild Culture and Tablet has proved of great service in the treatment of many human ills and illnesses due to intestinal infections. It has demonstrated beyond a doubt its power to overcome toxic intestinal bacteria.

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EARLY AND LATE GASTRIC CANCER AS SHOWN BY THE X-RAY.*

George M. Niles, M.D., Atlanta, Ga.

That cancer of the stomach is a problem worth our serious thought may be emphasized by the following brief, but appalling, statistics:

The annual mortality in the United States from this cause alone is reliably placed at 75,000. The cancer death rate is increasing at the rate of 2-2 per cent per annum throughout the civilized world. The male cancer death rate in the United States at ages 25 and over has increased 29 per cent during the last decade, and the female death rate 23 per cent. The average age of death from cancer of the stomach is 60.4 for males, and 58.2 for females.

Rosenfeld, a careful student of this pathologic enigma, brings out the interesting fact that the mortality from cancer is un-

usually high in the district of Joachimsthal, the source of radium supply.

The following dictum may and should be accepted without modification: Cancer of the stomach is always a fatal malady unless detected in its incipency, before marked infiltration has resulted, before adhesions have formed, and before the nearby glands have become involved.

There are, however, several factors which make the early diagnosis of cancer in this locality unusually difficult—at times impossible. The stomach is a patient and long-suffering organ; it continues to do its work, frequently month after month, in the presence of organic changes, with but little complaint.

The intestinal and pancreatic functions, in a neighborly manner, take over the duties of a lagging stomach, when that viscus becomes more or less incapacitated, thereby abating for a time any actual gastric lamentations, other than ill-defined expressions of distress, lightly called *dyspepsia*. Thus, in the early days of the malady, the patient does not feel impelled to seek expert diagnostic aid, and insidiously, the cancer progresses, until

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

Authors desiring reprints must notify Phoenix Printing Company, Augusta, Ga., within 15 days after publication. Prices of reprints published in this issue.

he suddenly finds that the day of grace has passed, that only palliation or non-interference is left him.

I have in a previous paper stressed the



Normal Stomach and Duodenum. All Portions Smooth and Well Filled.

Fig. 1.



Incipient Cancer at Pylorus. Operable for Cure.



Cancer of Pylorus. Operable for Palliation; Perhaps for Cure.

fact that when cancer of the stomach can be unmistakably demonstrated by clinical methods, the patient may well set his earthly affairs in order.

Any means, therefore, that will in any way whatsoever assist in an early apprehension of



Cancer Involving Pylorus. Operable for Cure.



Cancer of Body of Stomach. Inoperable.



Advanced Cancer. Cirrhotic Stage. Inoperable.

the presence of gastric carcinoma deserves consideration.

The various clinical procedures, chemical and otherwise, will not be touched—only the role of the Roentgen ray, either as an early diagnostic messenger, or a confirmatory witness to vanished opportunities. Let me here

ties. I might in addition quote Billroth, who said: "I consider the differential diagnosis of an ulcer of the stomach with cicatrization and beginning carcinomatous infiltration as very difficult, even when the fresh specimen is before us and cut into—only possible after



Cancer Involving Pylorus and Body of Stomach. Inoperable.



Cancer at Pylorus and First Portion of Duodenum. Operable for Cure.



Cancer Involving Body of Stomach. Inoperable.



Cancer Involving Lesser Curvature of Stomach. Inoperable.

affirm that every indurated ulcer of the stomach is potentially a cancer in the making, just as a burglar is potentially a murderer. Furthermore, no surgeon has the right to simply inspect an indurated ulcerated area in the stomach, and with his *ipse dixit* place it in the class of benign neoplasms without competent microscopic examination. In this position I am upheld by recognized authori-

ties. many and large sections have been made and examined microscopically."

Therefore, the patient, if he would be saved, must not be a laggard in seeking aid for digestive discomfort; and the medical attendant may well be alert in the association of obscure gastro-intestinal symptoms with possible early malignant disease of the stomach. Only by this prompt and mutual co-

operation may we render material assistance to this ever-increasing army, who clamor for relief, but too often in vain.

DISCUSSION OF DR. NILES' PAPER.

Dr. George M. Niles (Atlanta): I would like to add that this is only one phase that I have considered tonight, the X-ray appearance of this gastric condition; that, of course, there are many factors to be taken into consideration, not only by the internist and by the Roentgenologist, but by the surgeon, and we have cases occasionally where the Roentgen appearance is very unpromising and still the patient looks good and the surgeon is willing to take a chance; but, on the other hand, there are conditions vice versa. I do say, however, that in many instances where robust people, who have never had sickness or indigestion, suddenly develop indigestion after the middle period of life, and this indigestion can not be really satisfactorily accounted for, the Roentgen examination in addition to other approved methods is very plainly indicated, and in some of these cases it will give a clue to early operative procedure, which will absolutely save life. Otherwise, as I mentioned, the X-ray will only be a witness to vanished opportunities.

TUMORS OF THE GUMS.*

By J. L. Campbell, M.D., F.A.C.S. Professor of Surgical Anatomy and Clinical Surgery Atlanta Medical College (Medical Department Emory University), Surgeon to Wesley Memorial Hospital.

In order to comprehend the gravity of these tumors we must understand something of the embryology of the teeth and gums.

About the sixth week of interuterine life the first indication of the future teeth appears as a thickening of the deepest layer of the epithelium along the whole length of the gum. From this ledge ten Florentine flask-shaped knobs, the future enamel organs, or germs, project into the deep structures. These knobs soon assume a bell, or inverted egg-cup shape; immediately beneath each of these a clump of mesoderm forms a papilla-like mass from which the

dentine and pulp of the tooth are developed. The convex surface of the papilla soon comes in contact with the cup-shaped enamel organ, fitting into it like an egg in its cup. Along the concave surface of the enamel organ a row of columnar shaped epithelial cells, the ameloblasts begin to deposit enamel and a similar row of connective tissue cells. The odontoblasts form over the convex surface of the papilla and begin to deposit dentine. About this time the enamel organ is broken off from the stem, or cord, by which it is attached to the ledge, and a single layer of flattened epithelial cells, known as the outer layer of the enamel organ, forms over the convex surface and joining the ameloblasts, or inner layer, at the margin of the cup, extends over the sides of the papilla. Between the outer and inner layer the cells of the enamel organ assume a stellate reticular form and undergo a gelatinous degeneration.

The cord meanwhile breaks up into clumps known as cell rests, or "epithelial debris." These clumps are surrounded by flattened epithelium, while the central cells assume a stellate reticular form and finally disappear. Under certain conditions these rests may persist and are supposed to be the starting point of some of the tumors of the jaw.

While this process is taking place, the enamel organ and papilla are surrounded by a fibrous sac suspended from the deep surface of the ledge. The whole mass is known as the tooth follicle. The fibrous sac adheres to the sides of the papilla, but is separated from the enamel by the stellate reticular mass of degenerating epithelium. From the inner surface of the sac the cement substance is deposited around the root of the tooth and the periodontal membrane is formed from the outer surface. The sac now rests in a trough-like groove of bone which gradually closes up around it and sends processes between each follicle to form the sockets or alveoli. As the tooth is erupted that part of the sac above the bony margin of the alveolus is absorbed, while the outer surface of that around the root becomes continuous over the margin of the alveolus with the periosteum of the jaw. From this point most gum tumors arise. When a tooth is fully erupted it has a crown covered with enamel projecting above the gum, a neck between the surface of the gum and the periosteum, and a root fitting snugly in the alveolus.

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Case (1.) Angeio-fibroma of the gum; white, female; age 16 years.

Complains of large tumor of left upper gum.

Family and past history negative.

About seven years ago she first noticed a lump, probably the size of a pea, on the labial surface of the left upper gum in front of the first molar. It gave no pain and grew slowly until about one year ago it began to increase rapidly and bleed rather freely at night. Her general health was good until quite recently she began to lose flesh and feel badly.

The pointed end of a reddish tumor protrudes from between her lips and extends back to the pillars of the fauces. It is raised above the teeth so that she can not close her mouth. The teeth are irregular, decayed, broken and very black. There is a cherry red nevus around the left corner of her



Case (1) Before Operation. Angeiofibroma of Gum. Seven Years' Standing.

mouth. The tumor does not involve the cheek, but pushes it outward, giving that side of the face a full appearance. The X-ray shows the teeth irregular, but well set in the sockets. The blood shows a +4 plus Wassermann, 3,000,000 red and 7,000 white cells and the hemaglobin below 50 per cent. The urine is negative. She is weak from loss of blood and poor digestion, due to imperfect mastication.

Regardless of the positive Wassermann we believed the tumor was what is commonly called an epulis and decided to remove it together with the alveolar process. Under ether anesthesia I infiltrated well around the entire mass with a solution of .25 per



Case (1) After Operation. Teeth Restored at Southern Dental College.

cent novocain and 12 per cent 1-1,000 adrenalin in normal saline. There was very little hemorrhage, only one artery requiring ligation. The wound was packed with gauze. She was put on anti-syphilitic treatment as soon as the effect of the ether had passed off and has made a complete recovery. The teeth were restored by students of the Southern Dental College under the direction of Dr. Foster.

The microscopic examination of the tumor by Dr. John Funke shows that the deep portion was fibrous, while the anterior and superficial parts were angiomas. There was no indication of malignancy.

Case (2.) Fibroma of the gum; colored, female, age 60 years. Case from Dr. L. Sage Hardin's clinic, which he allowed me to show the class at the Atlanta Medical College.

Family and past history negative.

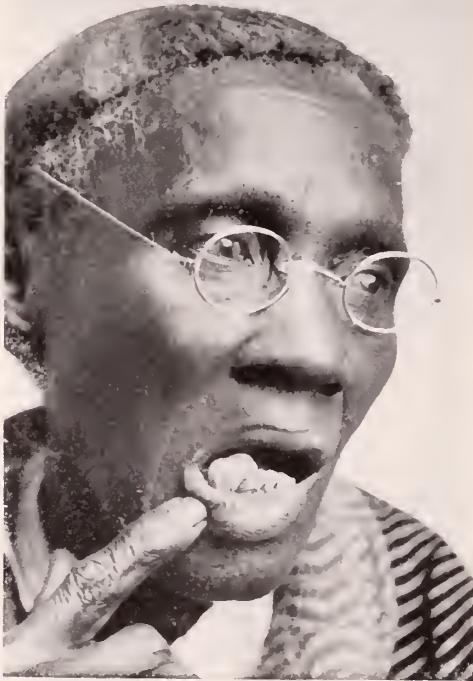
About 6 years ago she noticed a small lump on the labial surface of the right lower gum between the lateral incisor and canine teeth.

It gave no pain until about two weeks ago it began to throb as if about to burst.

It is about the size and shape of a white oak acorn, firm, and the color of the gum. It has separated the teeth between which it grows and apparently has a thick pedicle. The X-ray shows a small deposit of salivary calculi on the neck of one tooth.

Under a local anesthetic the adjoining teeth were extracted and a v-shaped piece of the gum with the tumor was cut away and the margin of the alveolus pinched off to insure complete removal. The microscopic examination by Dr. John Funke showed a pure fibroma.

There are a great many tumors of the gums which can not be assigned a definite cause. It seems that the most frequent cause is



Case (2). Fibroma of Gum. Six Years' Standing.

oral sepsis and deposits of salivary calculi around the neck of the teeth, causing from their irritation a hyperplasia of the connective tissue elements at the point of union of the periosteum and peridental membranes. Both sexes are equally affected; the age limit is wide, ranging from 10 to 50 with the largest number between the ages of 15 and 20.

Very little systematic effort has been made to classify tumors of the gums and writers have been satisfied to use the term epulis to designate any or all forms. McConnell states that the term epulis is equally ap-

propriate when applied to malignant and benign tumors. Fowler says that it is a term loosely applied and should be confined to a tumor characterized by a peculiar color, a mixture of blue, red and brown, and is the only instance of a pigmented sarcoma which is not exceedingly malignant. Owens says it is a term devoid of pathologic precision, may be malignant or benign, applied to any lump on the gum.

Fibroids and sarcomas of the less malignant type usually arise from the junction of the periosteum and peridental membrane, push their way up between the gum and neck of the tooth and are more often in front of the molars and on the labial surface of the gum. They may be localized or extended over the whole jaw.

The more malignant forms of sarcomas seem to arise from the periosteum of the jaw. Time and space forbid a complete analysis of all gum tumors, but one must remember that even though benign, they are inclined to recur when improperly removed, and that caustics and irritating treatments only add to the danger of malignant degeneration.

I am indebted to Drs. E. C. Thrash and John Funke for assistance in preparing this paper.

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DISCUSSION OF DR. CAMPBELL'S PAPER.

Dr. Everard A. Wilcox (Augusta): When a case of jaw tumor is seen, one must find out exactly what the nature of the growth is. Our effort should then be to accomplish a permanent cure with the least possible disfiguration. We should know that certain

jaw tumors can be cured by local and conservative operation, and that others, though less formidable looking, can not be cured by the most radical cutting operation.

Perhaps the commonest tumor of the mouth is the Epulis, which is usually an inflammatory new-growth resulting from chronic irritation of the gum about a diseased tooth or infected socket. They are irregularly shaped and vary in consistency from soft to hard according to the density of the granulation tissue, and frequently contain bone and lime from periosteal sprouts. The growth often encircles the offending tooth, and hangs over the alveolar process between teeth and cheek and between teeth and tongue. Microscopic examination shows infected granulation tissue and occasionally spicules of bone and areas of lime. Now if the latter be present you will almost surely find multinucleated "foreign-body" giant cells which have been attracted into the growth by the lime for the purpose of removing it. Strangely enough these growths have been called sarcomas, and giant celled sarcomas at that. This mistake arises from failure to correctly interpret the cell picture, and from the fact that they frequently recur. Be sure that the exciting irritant is removed along with the growth. The mass should be removed locally and the base seared with the cautery. We must be mindful of buccal epithelioma in these cases.

Ossifying periostitis and exostoses are sometimes seen on the alveolar border.

Of the benign tumors I have seen hard fibroma as large as a pecan nut and covered with intact epithelium. Also osteo-fibroma with several teeth incorporated in the growth.

As to malignant tumors: Sarcoma develops in the body of the jaw. One variety springing from periosteum grows slowly enough for some of the stimulated fibrous elements to differentiate into bone, cartilage and mucinous tissue, these being conglomerated with the spindle and round sarcoma cells. Such a mixed celled sarcoma is almost the only kind curable by operation, and then by fairly local resection. The other form of sarcoma promising operative cure is the medullary, giant-celled, or bone marrow sarcoma. Bloodgood says he has cured these by local resection and by curetting.

The most malignant tumors are the small round-celled and spindle-celled sarcomas, of-

ten situated at the angle growing rapidly and up the ramus, and widely infiltrating soft tissues and regional glands. Extension often puts the case beyond relief by the time it is discovered. According to Dr. Bloodgood's statistics these cases have not been permanently cured by the most mutilating operations.

The last group I shall mention can often be cured by fairly restricted local operation.

1. **Dentigerous Cyst.** These huge tumors develop deep in the alveolar process from the tooth follicle, and last for years. It is an expansive growth, spherical and crepitates on palpation. At operation the cyst wall is crushed in. If a single cavity is found much of the thin bony wall can be removed sub-periosteally and the redundant periosteum stuffed into what remains of the cavity to make bone.

Multilocular dentigerous cysts require chiselling. Osteo-myelitis often brings these cases to operation. I have seen one large cyst with offensive purulent contents and several external sinuses. Another in which a large coral like sequestrum was contained in the parchment-like cyst.

2. **Adamantine Epithelioma** is a clinically benign tumor. It develops from the enamel organ and makes a large spherical solid or cystic slow-growing tumor. It requires resection. There is no metastasis and no recurrence if completely removed.

Dr. J. L. Campbell (closing): I would like to say that very little effort has been made to classify gum tumors. Had I time to finish my paper, I would have said something on the subject, as it is now considered that the term "epulis" is without pathologic significance.

The British Dental Society appointed a committee, and this committee appointed a subcommittee, who worked eight years on the classification of tooth follicle cysts, and when they finished and made a report, it was worse mixed up than anything I have ever tried to wade through. The only reasonable classification of tooth follicle cysts is made by Bland-Sutton. Wohl, in the *Annals of Surgery*, classifies these tumors under three heads, which I can not now recall, but it is a most valuable classification.

One important thing is the cyst that forms at the apex of the roots of dead teeth. It springs from a granuloma that we are now taught is a point of focal infection. It as-

sumes a cystic appearance and is lined with epithelium, but where it comes from has not been definitely determined.

X-RAY EXAMINATION OF STOMACH, DUODENUM AND APPENDIX.*

J. S. Derr, M.D., Atlanta. Ga.

There are two principal methods of examining the stomach by the X-ray. The older, or so-called "indirect method," was used by the European pioneers in Roentgenology and depended upon a group of symptoms complex made of case history, physical findings and chemical examinations of the stomach contents, taken into consideration with the six-hour residue and gastric position and outline. They relied upon this combination much more than the actual demonstration of the lesion in the stomach wall because, as Dr. George, of Boston, points out, they used the fluoroscope almost entirely for the examinations, the rapid movements of the stomach defeating the old plate technique and giving only a blurred image. However, Hobnecht, Handik and others did wonderful work in the beginning with their low power apparatus. The direct, which is the American method, depends more upon the direct demonstration of the lesion itself and the work of George and Case and the serial plate examination of Cole marked a new epoch in gastric radiology.

We should not, however, discard what was good in the old method because of the new. Every clinical method should be made use of. The six-hour test is of great importance in certain cases and the fluoroscope should be used in every case. The thing to determine is whether or not we are dealing with an operative condition in the stomach or duodenum or whether the gastric symptoms are reflex from chronic appendicitis or colon lesions, or a gall bladder condition.

Drs. George and Cole were the first to call attention to the constant form of the first portion of the duodenum and its liability to deformity by ulcers and adhesions. Ninety-six per cent of duodenal ulcers are said to be located here. This was named "the cap duodenal blub," or *pelus ventriculi*. At the 1915 meeting of the A. R. R. S. Dr. Perrie,

of Montreal, showed the model of a table of his invention to do modified serial radiography of the pylorus and cap. This was constructed to make 16 exposures of the pylorus and cap in a single 14x17 plate. This was intended for a substitute for the enormously expensive full serial method of Cole. It has the disadvantage of showing too little of the stomach lumen. The four shift method with which I have had some success in the direct method of examination is much simpler, shows more of the stomach, the peristaltic waves in progress and reproduces any defect present. It can also be repeated as often as necessary. I wish to say, however, that I am in no sense the originator of this apparatus which is simply a modification which grew out of the Perrie table.

The X-ray diagnosis of appendicitis depends mainly upon demonstrating the lumen of the appendix filled with a bismuth, or a barium residue.

The presence of foreign bodies and concretions sometimes occur, and should be looked for. The appendix may be kinked, present constrictions, curled on itself, or be adherent in the retrocecal situation or be bound down by adhesions elsewhere. This is generally associated with tenderness about inner aspect of the cecum on fluoroscopic palpation. In obliterative appendicitis the lumen may be so constricted at the cecum that no barium can enter at all, as in a case I recently had where the appendix was found to be nothing but a fibrous cord. Dr. Case, of Battle Creek, finds the appendix to fill most easily by examining twenty-four hours after an opaque meal, but I have been able to fill the appendix best with the full colon injection of one pound of barium sulphate to two quarts of warm buttermilk, after the patient's bowels have been thoroughly cleansed with a purgative and enema. The retention in the colon next day will give an idea of its motility and if so much residue remains in the cecum as to obscure the appendiceal region, the examination must be repeated the day following. The retention of the residue in the appendix after the cecum is empty indicates a dangerous appendix whether it is tender or not, and a residue retained in the base of the cecum after the ascending colon is empty indicates adhesions about the cecum interfering with its peristaltic action.

Dr. Peirre reports a case in which he watched the appendix for 39 days, an acute

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condition setting in on the 40th day. I, myself, have watched the barium residue in the appendix for two weeks.

It goes without saying that in the acute surgical stage the X-ray diagnosis has only a limited place, and the bismuth meal or enema should not be used.

Reports of Cases.

Miss M. L., Duluth, Ga. Age 30. Case No. 3305.

Referred by Dr. E. Bates Block.

Patient had been sick for about two years. D. & C. operation; came to Dr. Block a year ago last January. Has been constipated, and has to take purgatives all the time. No nausea or vomiting.

Physical examination. Patient thin and poorly nourished.

X-ray examination.

Colon injection flowed well, transverse colon falls low and is adherent to lower part of descending, no ileocecal insufficiency. Hepatic flexure normal and **appendix** visible below butt of cecum and entire colon from yesterday.

Two days later cecum is still full of bismuth residue. Appendix below cecum, large upper portion and small kinked lower portion.

Diagnosis colonic adhesions. Chronic appendicitis.

Mr. T. B., Buford, Ga. Age 40. Case No. 3333.

Referred by Dr. Sage Hardin.

About February 15, 1917, patient was taken with what was diagnosed as grip and eight weeks had an attack of what was called indigestion. Five or six weeks ago patient had a severe attack of jaundice. No typical attack of gall stones colic, no prominent gastric symptoms. He is much constipated. Has had attacks of severe weakness and nervousness followed by dark stools. Has not lost much weight.

Physical examination. Patient has had a muddy color and is somewhat emaciated. There is tenderness and rigidity in the right hypochondria.

X-ray examination. Right kidney and gall bladder region negative.

Stomach serial ex. (two sets) showed a defect in the shape of a spur on the lesser curvature close to the pylorus.

Diagnosis: Pyloric ulcer, cap well formed.

Miss J. L., Locust Grove, Ga. Age 42. Case No. 2321. March 4, 1916.

Referred by Dr. Colvin.

Patient has suffered with chronic constipation for about six years and has been subject to bilious spells. This has been much worse since Christmas; had her first bad attack of pain since last April. She had four attacks in as many days. The pain was in epigastrium and referred to the right shoulder. This was so severe as to require morphia three times. She also has had some uterine trouble. Still menstruates.

X-ray examination. Gall bladder negative.

Stomach very high and drawn over to right. Cap is small and turned to left, where it is bound down. Peculiar deformity of antrum beyond pylorus.

Mr. E. D. P., Atlanta, Ga. Age 51. Case No. 3165.

Referred by Dr. Sage Hardin.

Patient has had more or less stomach trouble for last two years. Gets bilious and takes medicine to purge him, gets better and then gets worse. Has had typhoid twice. Vomits occasionally; at times feels as if he has a lump in his stomach. No blood vomited. Bowels move without purgatives generally.

Physical examination: Tenderness and rigidity in the epigastrium.

X-ray examination: Right kidney and gall bladder negative. **Stomach examination** showed large, cap much contracted and sharply turned to the left, serial plates an hour later confirming. Four hours later residue still in stomach, cap deformity persistent.

Operated. Dr. Sage Hardin.

Diagnosis: Adhesions about pylorus and first portion of duodenum, with partial obstruction.

Mr. S. J. M., Atlanta, Ga. Age 82. Case No. 2225.

Referred by Dr. Sage Hardin.

Patient complained of gas and sour stomach during warm weather and went to Dr. Johnson last November and took treatment for six weeks having his stomach washed out. He finally got so weak he could not go for treatment. He does not vomit and has no pain, but has a heaviness in the stomach and

a dull sick sensation. No tenderness on pressure.

X-ray examination 6 1-2 hours after bismuth meal showed a large residue. A full meal of barium and buttermilk was given and three sets of serial plates; these showed a filling defect of the pylorus with an absence of the duodenal cap in one. One set the pylorus eliminated and in another the cap very small and deformed.

Diagnosis: Cancer of the pylorus. Operated on by Dr. Hardin. Confirmed diagnosis.

May 24, 1916.

Mr. E. C. Everett, Atlanta, Ga. Age 24. Case No. 2454. Referred by Self.

Patient was examined by me about two years ago and a diagnosis of duodenal ulcer was made. He took the rest treatment and improved. About a month ago the trouble began to come back, and has been getting worse. Pain comes about two or two and a half hours after eating. He has dark stools, but no blood. At times he is sick at his stomach, but does not vomit much. There is a tender point in the right hypochondrium above to the right of navel.

Stomach examination: Empty in six hours, residue in terminal ileum and colon.

Full meal (barium and buttermilk) and ex. by serial method and fluoroscope. No ptosis or filling defect in stomach. Tender point over duodenum. Marked filling defect of duodenal cap.

Operation by Dr. Ellis showed ulcer of the duodenal 1-2-in. from pylorus and the region tied up with adhesions.

December 17, 1915.

Mrs. J. M. B., Atlanta, Ga. Age 50. Case No. 2205. Referred by Dr. C. T. Davison.

Patient had an operation for female trouble one year ago. After this she began to have stomach trouble; was in bed with constant vomiting four weeks. Her physician says she had a typical case of pellagra, which cleared up in two months under treatment.

X-ray examination of stomach showed a large 6 1-2 residue which sagged below the umbilicus in the standing position. Plate of full stomach with hyper-peristalsis, the dilatation being especially marked at the an-

trum. The duodenal cap is almost replaced by a spurt of bismuth in the standing position. In the prone exposures the pylorus is rounded with a narrow spread of bismuth between it and the cap.

Diagnosis: Pyloric obstruction, non-malignant.

Operation. Dr. Davison showed a tumor of the pylorus. Resection and gastro-enterostomy.

February 28, 1916.

Dr. L. E., Birmingham, Ala. Age 47. Case No. 2314. Referred by Dr. Fitts.

Patient has suffered for last eight years from gastric disturbance and pain. Vomiting two or three times a week, and this comes several hours after eating. Twice had hemorrhage, the first time a considerable quantity, no tender spot, but entire abdomen is tender. Has been constipated since 1908.

X-ray examination showed six-hour residue. Serial plates (two sets) show a contracted and deformed duodenal cap and a definite insisura on the greater curvature, which is entirely distinct from the peristaltic wave.

Diagnosis: Duodenal ulcer and adhesions. Confirmed at operation by Drs. Dowman and Remsen.

March 24, 1916.

Mr. L. H. S., Tiger, Ga. Age 51. Case No. 2352. Referred by Dr. Hardin.

Patient has history of occasional gastric disturbance for two or three years. Has only really been ill for a week. Vomiting and pain; has not vomited any blood, but vomiting has been dark.

X-ray examination of stomach after a full meal was given; the entire antrum of the stomach was missing, except for a thin streak of barium, and this region was markedly tender on palpation. The cardia was not dilated. A single and two sets of serial plates were made; these all showed a full cap corresponding the area indicated.

Operation. Dr. Hardin; the malignant involvement extended up the lesser curvature to the esophagus. Gastro-enterostomy.

Diagnosis. Carcinoma of the antrum.

October 31, 1916.

Mr. W. B. W., Toccoa, Ga. Age 58. Case No. 3100. Referred by Dr. Sage Hardin.

Patient was comparatively well until seven weeks ago. Had some indigestion before this time. Was taken suddenly with sick stomach, and has been in bed ever since. Has vomited up nearly everything for about eleven days, and has had no movement of the bowels.

Physical examination: Patient is so weak he can not sit up; very emaciated; abdomen broad-like and full of nodules.

X-ray examination: Two glasses of buttermilk and barium was swallowed with great difficulty.

Esophagus full; pylorus patulous. Stomach small, contracted and deformed. Duodenum deformed. No peristalsis wave detected.

Diagnosis: Diffuse carcinoma of stomach.

Operation: Dr. Hardin; showed plastic peritonitis.

January 28, 1916.

Mr. A. T., Carrollton, Ga. Age 34. Case No. 2263. Referred by Dr. Griffin.

Patient has had gas on his stomach and pain across his shoulder blades for about three years. Has had jaundice. Tenderness over pit of stomach.

X-ray examination after meal was given showed marked gastropsis and at first hyper-peristalsis which, however, soon changed to no peristalsis at all. Two sets of serial plates showed a normal cap, also a well defined penetrating ulcer of the lesser curvature about the pars media.

Confirmed by Dr. Sage Hardin at operation. Ulcer resected.

March 6, 1917.

Mrs. C. C., Atlanta, Ga. Age —. Case No. 3277. Referred by Dr. J. S. Hurt.

Patient has had eight children, and has been frail and ailing since the birth of her twins, 5 years old. She is troubled with indigestion a great deal; has a tendency to an acid condition and has had a clinical diagnosis of chronic appendicitis and gall bladder trouble.

Physical examination: Patient is thin, abdomen soft, no masses; some tenderness in both iliac fossa.

X-ray examination of stomach, serial plates and standing normal duodenum, no

filling defect, peristalsis normal. Slight ptosis. (Fluoroscopic standing.)

Twenty-four hours after meal showed a large congested residue in cecum and the terminal ileum full for last two inches.

Appendix, not visible.

Colon inj., marked ileocecal incompetency. Hepatic angle sharp; folding of transverse down on descending colon, but adherent. (Fluoroscope.)

Twenty-four hours after colon injection, a moderate residue in cecum with traces of barium in the balance of colon.

The appendix is shown engorged, convoluted and retrocecal and tender on pressure.

Diagnosis: Chronic adherent appendix with adhesions around the cecum and terminal ileum. Stomach and duodenum normal, no adhesions. Gallstones not found.

Operation: Gall-bladder, no stones. Adhesive band just below hepatic flexure. Balance of diagnosis confirmed absolutely.

March 13, 1917.

Mr. J. B. J., Baxley, Ga. Age 61. Case No. 3295. Referred by Drs. Roberts and Coleman.

At the age of 25 patient had a history of indigestion lasting from two or three years with complete recovery (heavy alcoholic history). At the age of 58 he had a severe hemorrhage from the stomach accompanied with blood in the stools. Three or four months later had another hemorrhage. No blood since. Vomiting after eating for past three or four months. Constipated. Has hunger pains, gnawing character. Has lost 20 pounds in last five months and is short of heart.

Physical examination: Hard mass (slightly tender), corresponding to the left lobe of liver.

X-ray examination: Six and a half-hour test, moderate residue in stomach, pointed at pylorus. (Fluoroscopic.) No esophageal obstruction. A full meal given and examination made. (Fluoroscopic.) No ptosis or dilatation. A filling defect corresponding to the entire antrum. Plates prone and serial shows a definite carcinoma of the antrum ending at the pylorus. Most of the tenderness is over the liver.

Operation by Dr. C. W. Roberts.

Infiltration.

November 15, 1916.

Mr. W. F. A., Atlanta, Ga. Age 45. Case No. 3126. Referred by Dr. Fitts.

Patient being worked up for clinic for Dr. Witherspoon. Has a ten-year history of pain and hematemesis, also blood in the stools. Thread test positive at pylorus.

X-ray examination: Gastric lumen; fills well and of good size; greater curvature about three fingers below umbilicus (standing). Peristalsis active. Pylorus drawn somewhat to the right, outline normal except at the pylorus where sulcus between the cap and the antrum is obliterated, permitting free and continuous passage of bismuth. The cap is irregular and drawn to the left. It is distinctly tender on fluoroscopic palpation. This irregularity is more or less constantly of the same character in the ten exposures made.

There is no six-hour residue in the stomach.

Diagnosis: Uleer of the pylorus with involvement of the first portion of the duodenum, with periduodenal adhesions. No obstruction present.

March 16, 1917.

Mrs. J. B., Montgomery, Ala. Age 32. Case No. 3307. Referred by Dr. Blackman.

Patient was in good health until just before Christmas, since which time she has lost 11 pounds. Has gas.

No vomiting of blood, but the test meal blood-stained. Chemical examination, absence of Hcl; presence of ———, bacillus and lactic acid.

No tumor mass palpable. Patient has a muddy, sallow complexion, but keeps her strength pretty well.

X-ray examination of stomach, a large six-hour residue of sickle shape, full barium meal was given shows enormous dilatation of the stomach, with filling defect in the antrum. Duodenum not visible at all on plate made immediately after drinking meal. One and half hours after the cap is shown and only a thin trail of barium leading through the antrum which is almost obliterated. The cap is bent over. A large filling defect, either inflammatory or malignant in nature.

Operation. Carcinomatous mass found, involving entire antrum, extending up lesser curvature. Posterior gastro-enterostomy.

October 28, 1915.

Mr. J. N., Atlanta, Ga. Age 34. Case No. 2109. Referred by Dr. Hardin.

Patient has suffered with stomach trouble for last two years. He has pain after eating, but has less pain if he is full than when empty. He never vomits. Has tenderness in front, but not the back. He has always been constipated all his life, and has dull pains in his lower abdomen, especially on the right side. He sleeps well. He has lost about three pounds in weight.

...**X-ray examination** of stomach; no ptosis peristalsis normal. Duodenal cap is turned sharply to the left in all plates; sulcus is not sharply marked; no tenderness.

Colon inj.; hepatic flexure somewhat prolapsed, but not adherent; no tenderness.

Twenty-four hours after colon injection cecum and transverse colon full; appendix visible, with bulbus end and constriction above.

Stomach: Six hours later shows stomach full and small intestines empty; large bowels full.

October 6, 1915.

Miss M. W., Anniston, Ala. Age 31. Case No. 2076. Referred by Dr. Adkins.

Patient has been subject to attacks of acute indigestion, with swelling up with gas of the stomach and colon. Started 12 years ago, gradually getting worse. She is not nauseated unless produced to empty her stomach. Had typhoid ten years ago; has been stout all her life. Any kind of rich food will bring on these attacks. Has pains on both sides and in the region of the appendix. She is not constipated.

X-ray examination of colon injection, cecum and transverse colon dilated, the former markedly so. There is reduplication at the hepatic flexure, which extends very high up and the transverse is closely adherent to the right half way down, leaving an acute angle. Descending colon and sigmoid are normal. **Appendix** not visible after twenty-four hours. Large residue in cecum and ascending colon. **Appendix** visible, small and curved upward. Fluoroscopic examination shows a marked tenderness at hepatic flexure, and also over appendix. Operation.

March 18, 1916.

Miss H. D., Atlanta, Ga. Age 47. Case No. 2343. Referred by Dr. Hardin.

Patient has been having pains all over her body. Had typhoid 19 years ago, and since then indigestion; constipated, with severe headaches. Has to take purgatives all the time.

X-ray examination of stomach. (Fluoroscopic.) Marked ptosis, without tenderness, anywhere.

Serial plates, cap normal; duodenum fills rapidly; stomach practically empty in three hours.

Colon inj. Ileocecal valve competent, transverse colon has low attachment to descending. No ileocecal insufficiency. The descending and transverse duodenum is large and drops low in pelvis.

Patient returned for observation on residue; the bowels were entirely empty, except for the appendix, which was full from end to end and low in the iliac fossa. Operation.

December 5, 1916.

Mr. E. P. M., Alabama. Age 24. Case No. 3152. Referred by Dr. Hardin.

Patient has had trouble in the region of the appendix for six years. He has never had an acute attack. At times he is constipated, and had ulceration of the bowels at the age of 13; passed no blood, but mucus.

Physical examination: Patient is rather thin.

X-ray examination of colon injection about 4-5 of the usual amount given; marked ileocecal insufficiency and kinking at the hepatic flexure; this is high and about one inch in extent. Tenderness over cecum and hepatic flexure on palpation.

Twenty-four hours residue shows appendix full, kinked and has a bulbous extremity. Operation, Dr. Hardin.

January 22, 1916.

Mrs. I. R. H., Georgia Baptist Hospital. Age —. Case No. 2254. Referred by Dr. Ellis.

Patient has had two operations, one twenty years ago for removal of the uterus. Other one was three years ago for fastening up a prolapsed kidney. Last July patient had an acute attack of the right side, and since then has had two other attacks;

she was relieved by ice being put on the abdomen.

X-ray examination: Colon injection shows an hepatic kink with adhesions to the tip of cecum and a suggestion of the appendix. The splenic flexure is high and the sigmoid loop enormously redundant, extending above the umbilicus. Transverse colon on pubis when patient under fluoroscope.

Twenty-four hours showed a cecum and colon still full; appendix full and sub-cecal. Transverse colon three inches below umbilicus.

Findings at operation showed a chronic appendicitis and extensive adhesions.

June 12, 1916.

Mr. G. H. B., Toccoa, Ga. Age 23. Case No. 2460. Referred by Dr. Sage Hardin.

Patient's illness began about two months ago with pain in his right side high up under rib margin. Patient is not troubled so much unless he works hard and gets tired. Pain does not radiate to groin. Has no pain or tenderness in pit of stomach. Seldom nauseated or vomits. He has never been constipated.

X-ray examination of stomach, serial plates and fluoroscope examination showed no ptosis, tenderness or filling defect. Duodenum failed to fill well and tender point present. Plates two and three and a quarter hours later showed defective cap.

Twenty-four hours after meal showed a large residue in colon and cecum, with a disconnected residue in the appendix. This seemed to have a connection near the top. The colon is normal except some kinking at the splenic flexure.

Forty-eight hours later appendix is still full.

August 24, 1915.

D. P. C., Baxley, Ga. Age 50. Case No. 2024. Referred by Self.

Patient has been troubled off and on with pain in his left side for several years. This had been getting worse until he is in constant discomfort. Four or five hours after eating, when he fills up with gas.

X-ray examination: Colon injection shows a large cecum with ileocecal insufficiency marked, also a kinking with adhesions at the splenic flexure and a kink half way down the descending colon.

Twenty-four hours after shows a full appendix convoluted, also colon and cecum to splenic flexure.

Forty-eight hours later appendix still full, but straightened out; cecum empty.

March 27, 1917.

Mrs. H. C., Atlanta, Ga. Age 35. Case No. 3328. Referred by Dr. Dunn.

Patient had her first attack suggesting of gallstones about five years ago. There was pain which came on every afternoon in the pit of the stomach which would finally pass off. It was like acute indigestion. Finally it came and stayed in one place. One year later her worst attack came. About three weeks ago she went to bed with an acute attack for two weeks. Marked jaundice the first attack, but none at the last.

Physical examination: Patient complains of pain and tenderness in the right side. Otherwise well nourished.

X-ray examination of colon injection shows kinking at the hepatic flexure, marked ileocecal incompetency.

Transverse and descending.

Twenty-four hours after shows a large residue in the colon and cecum. The appendix is full, curved and long. Shown in the dorsal position with pressure over the cecum. In anterior position colon. There is a filling defect shown between the cecum and latter part of the appendix.

Mrs. H. M. H., Atlanta, Ga. Age 21. Case No. 1867. Referred by Dr. ———.

Since birth of her healthy baby 24 months old she has had two attacks of pain in the right iliac fossa, which resembled appendicitis. She has had several attacks before. General health excellent and not at all troubled with constipation.

X-ray examination. Colon injection showed ileocecal insufficiency, with very movable cecum and marked hepatic kink. The appendix is not visible, and there is some tenderness. The sigmoid is normal.

Examination made showed a tender appendix full of barium and fluoroscope. The appendix is doubled looped, has a constriction and a kink. Residue in butt of cecum.

Fifty-three hours after appendix is still full.

Seventy-two hours after appendix is still full.

Ninety-six hours after was seen with the fluoroscope.

Suite 719 Trust Bldg., Atlanta.

DISCUSSION OF DR. DERR'S PAPER.

Dr. George M. Niles (Atlanta): I am glad to open this discussion and to be able to testify that the earnest, energetic and unwearying work that Dr. Derr is doing in the interest of Roentgenology is helpful both to internist and surgeon. The lantern slides he has shown us tonight have expressed a variety of subjects, but in the main have demonstrated very clearly the points which he wished to bring out. As to his serial method of making several exposures on one plate, I do not agree with him. Of course, different men have different methods and one will get better results with one method and another with another method.

I was in a New York laboratory a month ago with both Dr. Cole, the man who originated the serial method, and Dr. Stewart. Neither of them did I find using the serial method at present. They take a great many exposures on different plates now. I mentioned in my previous remarks the necessity of numerous exposures, but this old idea of sending in a patient for a Roentgenologic examination with the request that you take a picture and tell what is wrong with him, is entirely fallacious and unsatisfactory. The Roentgenologist in his examination should be allowed sufficient latitude and permitted to take just as many pictures as the case requires. Sometimes one plate will give the key to the whole pathologic problem. I might mention especially in regard to investigation for gall stones. I remember one instance where I took eighteen plates of one case where the clinical symptoms indicated gallstones, and seventeen of them were as bare as the desert of Sahara, but the shadow of the stone showed on the next one. I am glad to say that Dr. Derr is daily adding to our sum total of knowledge of Roentgen science. He is earnest, energetic, he is truthful, and he is really a worth-while Roentgenologist.

Dr. W. A. Cole (Savannah): In reference to barium in the appendix, I do not think the finding or not finding of barium in the

appendix has any bearing upon the case. If you have an obliterative appendicitis you do not find barium; if you do not have, you will find it if you allow it enough time. If you do find it and it remains longer than the normal period of twenty-four to thirty-six hours, then I say there is in all probability a disease process causing retention. When we find stones or kinks or something on that order, then the barium in there is of value; but the absence of barium in the appendix does not necessarily mean disease.

Dr. Derr's four-shift method, I think, is extremely valuable as an economic measure. First, we make an examination with the fluoroscope. Following that we take several Roentgenograms of the entire stomach. This gives us the entire organ, and any suspected area can be picked out and studied more closely with the four-shift method.

It has been determined in some of the larger clinics, notably at the University of Pennsylvania Hospital, that 50 per cent of cases sent by the internists to the Roentgen department for examination of the stomach show normal stomachs. This brings up something of especial interest in the fact that the Mayo Clinic does not only make a fluoroscopy of the conditions within the stomach, but also of surrounding organs. In that way we have been able to pick up unsuspected lesions, and in quite a number of cases we have picked up incipient tuberculosis giving referred symptoms to the stomach. In one case a dilated heart was the only symptom we could find. In another, an aneurism of the arch of the aorta. These all gave stomach symptoms, but the stomachs were shown perfectly normal in all instances except one.

I was led by the title of Dr. Derr's paper to believe that this paper would be along the line of why the Roentgen ray was not more universally adopted as a method of diagnosis. I will speak along that line. I think there are several reasons why this method is not more often adopted. First, the medical profession, to say nothing of the laymen, is not educated to the point, or they do not recognize, that we can or can not show certain things by the Roentgen examination. In our city of Savannah I have doctors call me up frequently to know if I can show certain things that I have not been able to show, and have not been able to find anything in the literature where any

other man has been able to show, which shows that the medical profession do not know what can or can not be shown by the Roentgen ray. Another reason is that most of the laymen and a good number of our profession believe that if a man has a transformer and a few plates, he is a Roentgenologist. At the Johns Hopkins Hospital one of the men recently made a statement that the Roentgen ray is not an absolute method of diagnosis; that it did not give absolute symptoms in most cases, but that it did give symptoms of equal value with all of the other methods combined in the diagnosis of stomach disease. This, he said, is in the hands of an expert, and I think the keynote of the whole thing is that every man who gets him a transformer and a few plates is not a Roentgenologist. He may be able to make pictures, but can he read the plates? That is the whole thing. Anybody can take pictures; it is the reading of them that counts.

Dr. L. S. Hardin (Atlanta): As in all cases, with either the microscope, the Wassermann test or the X-ray, this examination should be secondary to the clinical diagnosis. In that way we find it an invaluable aid. Dr. Derr has done excellent work for me and given me diagnoses where I was unable to make them. The negative finding is as valuable often as the positive. Recently I have had some cases with a definite history of stone in the liver or kidney, and no stone was found. I also had a stomach case in which after ten days I was unable to make a conclusive diagnosis. But Dr. Derr with the X-ray of the stomach showed an absence of the filling of the pyloric end of the stomach, and diagnosed adhesions of the stomach, which operation confirmed. In the appendix he has done some excellent work in diagnosing cases that I was unable to decide whether it was the stomach or appendix. Two of his cases showed the appendix located in the same position at different periods in an examination over ten days or two weeks. Being able to decipher the place is the important part.

Dr. J. F. Derr (closing): Referring to Dr. Niles' contention about Dr. Cole taking many exposures on many plates, Dr. Cole has an apparatus very much like a mill-wheel, on which he makes a number of plates continuously just as I would make four plates.

In regard to what Dr. Cole said about the appendix, I mentioned that in my paper. Dr.

Case, of Battle Creek, says he frequently watches the appendix fill and empty during the colon injections, and so the retention of barium in the appendix after the colon is empty, I still maintain, has a definite pathologic significance.

MODERN ARTIFICIAL INFANT FEEDING—SIMPLE, PRACTICAL AND SCIENTIFIC.*

By W. A. Mulherin, M.D., Augusta, Georgia. Associate Professor of Pediatrics, Medical Department, University of Georgia, Visiting Pediatrician to Children's Hospital and University Hospital.

The object in presenting this paper is to call attention of the general practitioner to the latest ideas concerning artificial infant feeding. I am happy to state there is a strong tendency to simplicity; at the same time the method is simple, practical and fairly scientific.

Percentage feeding is fast becoming obsolete, not because of any imperfection in the method of feeding, but, merely on account of the difficulty of being thoroughly understood and easily handled by the general practitioner. Much good has been and is still being accomplished by those who intelligently use percentage feeding. The simpler method is fast becoming popular, and most excellent work is now accomplished by it, mainly on account of it being more easily understood and more readily applied by the general practitioner.

Basic Principles of Artificial Infant Feeding.

Any method of artificial infant feeding in order to be logical, sensible and practical must recognize the basic principles of infant feeding. These basic principles may be summed up in a few words:

1st. The recognition that the Good Lord can beat all physicians feeding babies. This at once brings us to the analysis of mother's milk, the food that nature intends babies should have. The analysis of mother's milk shows: Fats 3.50%, carbohydrates 7.50%, proteins 1.25%, salts .20%, water 87.55%.

2nd. Any feeding we give a baby should contain all the ingredients found in mother's milk, as fats, carbohydrates, proteins, salts and water.

3rd. The artificial feeding should contain these ingredients in sufficient quantity to generate enough heat for the maintenance of life, enough for repair of waste tissues and enough to promote proper and healthy growth of body. If any artificial feeding does not measure up to these requirements, it will be found faulty, and will die as natural a death as so many of the popular, but ill-advised, ones have done.

Physiology of Mother's Milk.

The physiological study of the purpose of ingredients composing mother's milk teaches us that fats are intended for the generation of heat, storing up of fats, the formation of nerve and bone tissue. The carbohydrates function is very similar to those of the fats, that is for generation of heat and storing up of fats.

For this reason fats and carbohydrates in our formulae are, as a temporary measure, interchangeable, that is, if for any reason our fats have been lowered, we usually have to increase our carbohydrates proportionately. This is done for the sole purpose of generating enough heat and energy necessary for the baby in order not to call upon the proteins to fulfill this purpose. Proteins are recognized as the most important ingredient in mother's milk for the baby's welfare. Physiology teaches us that its function is to promote cell proliferation, as muscular growth, tissue development and blood formation. It is the protein element upon which the new method of infant feeding lays particular stress. The covering of the protein requirements of the baby is the keynote of its success. I will make no special mention of the salts, as cow's milk contains more salts than mother's milk; although the different kinds of salts in the two milks vary considerably. There is today some very pretty work being carried out along this line, but not enough known to be of any practical value in the artificial feeding of an infant.

It can be easily seen from the physiological study of mother's milk why any correct artificial feeding should contain fats, carbohydrates and proteins, and why they should be present in sufficient quantities to obtain perfect development and healthy babies. For the same reason, it clearly demonstrates why proprietary foods, such as condensed milk, Mellin's Food, Malted Milk, Nestle Food, etc., when diluted with water alone, and no milk added, do not measure

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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up to the basic principles or physiological requirements of good artificial feeding. They will all be found decidedly deficient in fats and proteins; and, therefore, will give imperfect development and predispose to malnutrition, with its quite common sequelae, rickets and scurvy. Mellin's Food and Malted Milk when used in the same way as sugar of milk, or dextri-maltose in a milk formula, are much less open to objection.

Modern Method.

This practically new method is not entirely modern. It has been used in Europe for many years, and likewise in the Western States who never adopted the percentage method of feeding. Its method tersely stated is to take whole cow's milk, not top milk or cream, but straight cow's milk, dilute it sufficiently with water to make the quantity desired in formula, and add enough sugar (dextri-maltose, sugar of milk, or cane sugar), approximately 1 to 1½ ounces, by weight, to cover the food requirements of the baby.

Protein Requirements.

Allen in his studies on metabolism has shown that the average baby requires one ounce of whole cow's milk for each pound that it weighs in order to cover the nitrogenous waste of its body—or in other words, to establish "a nitrogenous equilibrium." If the baby be given one and a half ounces for each pound it weighs, it will receive enough protein element to offset the nitrogenous waste, and enough to promote normal, healthy growth of the tissues of the body. It must be clearly understood, however, that the protein element is not to be utilized for generation of heat, and, therefore, enough fats and carbohydrates must be given in formula to take care of this important function and allow the proteins full right of way to build tissue. To make this clear, let us suppose a baby three months of age weighs 12 pounds. To construct a formula that would cover its protein requirements, it would take one and a half ounces for each pound it weighs, which would mean that 18 ounces of whole cow's milk would have to be put in the formula.

Fat Requirements.

The amount of butter fats required by the average baby for normal developments when artificially fed, has been found to be less than we formerly thought. The quantity of fats contained in whole cow's milk

used when covering the protein requirements has been found to be quite sufficient to cover the fat requirements. Therefore, the 18 ounces put in formula would not only cover the proteins, but also the fat requirements.

Sugar Requirements.

The amount of sugar required to be added to the formula to cover the caloric needs of the baby has been roughly, but not always accurately, estimated to be approximately one to one and a half ounces (by weight), which means 3 even tablespoonfuls for 1 ounce (by weight), or 4½ even tablespoonfuls for 1½ ounces (by weight). This will usually be found sufficient sugar to add to your formula. If, however, in checking over your calories it is found not sufficient, more sugar should be added to cover the food requirements.

Caloric Requirements.

Huebner and Ruebner, after studying one thousand normal, healthy, thriving, breast-fed babies, found by weighing the baby before and after nursing their mothers, the average quantity of milk obtained at nursing. They then determined the number of calories in an ounce of mother's milk, and learned that approximately 45 calories for each pound the baby weighed was the common average amount of calories upon which the normal, healthy baby thrived.

To estimate the amount of calories in a formula of artificial infant feeding is a very simple matter. There are three foods, the caloric value of which should be known; they are:

Cow's milk, 1 ounce, 20 calories.

Sugar of milk, dextri-maltose, Mellin's Food, Malted Milk, 1 even tablespoonful, 40 calories.

Sugar of milk, dextri-maltose, Mellin's Food Malted Milk (1 ounce by weight), 3 even tablespoonfuls, 120 calories.

Cane Sugar, 1 even tablespoonful, 60 calories.

Cane Sugar, 3 even tablespoonfuls, 180 calories.

Barley Flour, 3 even tablespoonfuls, 100 calories.

Now, to practically demonstrate the figuring out of calories in a formula, let us figure the calories in the above case, a baby weighing 12 pounds. We said it would take 18 ounces of whole cow's milk to cover the protein requirements. As each ounce of cow's milk contains 20 calories, 18 ounces would

contain 18 times 20, which equals 360 calories. This would represent the amount of food units contributed by the milk. Now, if we add $4\frac{1}{2}$ even tablespoonfuls of sugar of milk or dextri-maltose (which represents one and a half ounce by weight), we will add 180 calories to our formula, as each tablespoonful equals 40 calories. If cane sugar is used, it will only require 3 even tablespoonfuls to obtain the 180 calories. If we now add the 360 calories contributed by the milk, and the 180 calories from the sugar, we get 540 calories—the total amount of calories in the food. If we then divide the 540 calories by the weight of the baby, 12 pounds, we get 45 calories for each pound the baby weighs.

Theoretically, this will completely cover the calorie requirements of the baby, but we have to remember that the calorie value checking is not absolute, and should be used with an understanding of its limitations. Its main object is to show us whether or not we are overfeeding or underfeeding our little patients, and to assure us that we are giving the baby the amount of food upon which the average healthy baby thrives.

Individuality of Baby.

The individuality of the baby is an important factor in artificial infant feeding, and has to be reckoned with. It will be well to remember that active, crying babies require more calories than fat, good-natured babies, for the same reason that an engine running at high speed will use up and require more fuel than one running at low speed. Malnutrition cases also require more food; I have frequently had to feed as many as 65 to 72 calories per pound weight before I could get the proper results. Again the appetite of the baby has to be considered; some assimilate well and require less food; others assimilate badly and require more food. The stools, likewise, have to be studied to note the tolerance for fats, carbohydrates and proteins. Also the general appearance of the baby, as well as the gain or loss in weight, which might influence us to vary our formula.

The Water Requirements.

The amount of water to be added to each formula should be enough to fulfil the water requirements of the baby. This requirement is recognized to be in the early months of life one-fifth the body weight, more practically expressed would mean about 3

ounces for each pound the baby weighs. To practically demonstrate this we might apply it to the baby weighing 12 pounds. If we allow 3 ounces for each pound the baby weighs, the amount of fluids required would be 3 times 12, which would equal 36 ounces of fluids to be contained in our formula. In older babies, weighing around 18 to 20 pounds, the water requirements are usually about 2 ounces per pound weight.

Stomach Capacity.

The old scale of stomach capacity of the baby, deducted from the amount of fluids a dead baby's stomach would hold, is not used today. It has been shown that the capacities of a living baby's stomach and a dead baby's stomach vary very considerably. The X-ray plate taken of a baby's stomach when taking a feeding, after bismuth had been added to the baby's food, plainly demonstrated that fluid was flowing through the pylorus pretty constantly even while the baby was taking its bottle. Therefore, we are much more generous in the amount of food allowed at each feeding. It is now customary to follow the European method of allowing a baby from birth 3 ounces to each feeding. The baby will not take all of this in the early days, but when three or four weeks of age, will take care of it very nicely. The amount of food to be given a baby at the different months of age varies considerably. It has been my practice to start with 3 ounces at birth and when 2 months of age offer 4 ounces at a feeding, at 3 months to offer 5 ounces, at 4 and 5 months of age 5 to 6 ounces, 6 months of age 6 to 7 ounces, 7 months of age 7 to 8 ounces, 8 to 12 months of age 8 to 10 ounces.

Intervals of Feeding.

The practice of feeding babies every two hours as advocated some few years ago has been found to be defective and harmful. A great deal of colic and digestive disturbances have been relieved by resorting to longer intervals of feeding. It is now customary to start from birth with three-hour intervals, six feedings daily at 6, 9, 12, 3, 6 and 9, and allowing one night feeding if called for up to 3 or 5 months of age. More recent rules stop night feeding at three months of age. Personally, I permit it up to five months of age if the baby calls for it. At six months of age the intervals are lengthened to four hours, which would give us the hours of 6, 10, 2, 6 and 10.

Practical Application.

Now, with all the available data on hand we might construct our formula for the baby three months of age, weighing 12 pounds. The first thing to do would be to make up our minds the amount of food to be given at each feeding, which would be 5 ounces. Next, the number of feedings, which would be 7. This will, therefore, give us 7 feedings of 5 ounces each, making a total of 35 ounces for our formula. Theoretically 36 ounces figures out if we allow 3 ounces for each pound, but 35 ounces divides the feeding more evenly and is close enough for practical work. As formerly stated, the most important point in constructing the formula is to cover the protein requirements of the baby, and to do this we will put $1\frac{1}{2}$ ounces whole cow's milk for each pound the baby weighs in our formula. The baby weighs 12 pounds, therefore $1\frac{1}{2}$ ounces multiplied by 12 pounds equals 18 ounces of whole cow's milk to be put in our formula. As expressed above, the fat requirements are entirely covered by the amount of fats contained in the 18 ounces of whole milk. The amount of sugar to be added should be enough to bring the formula up to the food requirements of the baby, which we estimated above to be approximately $4\frac{1}{2}$ even tablespoonfuls of dextri-maltose or sugar of milk, or 3 of cane sugar. Then all that remains is to add enough water to make 35 ounces, which will be 17 ounces of water—this completes our formula. Written out for the mother, which should always be done, it would appear:

Shake thoroughly one quart of cow's milk and mix as follows:

Cow's milk—18 ounces.

Dextri-maltose— $4\frac{1}{2}$ even tablespoonfuls.

Boiled water—17 ounces.

Divide into 7 feedings of 5 ounces each. Give at 6, 9, 12, 3, 6, 9, and one night feeding if called for.

In closing I would like to state that there is no absolutely strict, scientific method of artificial infant feeding, but for practical purposes this simple method of feeding is about as scientific as possible, when we consider that every baby possesses certain peculiarities and individualities. We must bear in mind that this method gives us good general rules, which if followed will prove successful in the great majority of normal,

healthy babies. It shows us whether we are giving a baby a food which contains the proper ingredients for normal growth, and if the required amount be present. Likewise, it permits us to check over our feeding in a sensible way, to determine if the baby is receiving the recognized number of food units.

I would like to particularly emphasize that this new method of artificial infant feeding is not to be applied to sick babies, a mistake that so many general practitioners make. That is a different proposition, and does not come within the scope of this paper.

I wish also to stress the importance of accepting this feeding as a general rule and to take into consideration the various tolerances of the baby to fats, carbohydrates and proteins, and the use of common sense and judgment in its application. In other words, remember that the food has to be adapted to the baby's digestive organs, and not the digestive organs to the food. If these essential points are borne in mind and the feeding applied properly, I am quite sure that it will be found to be a simple, practical and fairly scientific method of artificial infant feeding.

DR. W. W. PILCHER.

The medical profession will be grieved to learn of the death, from acute hemorrhagic pancreatitis, of Dr. W. W. Pilcher, a former president of the Association. Perhaps no member of the Association was better known, certainly no one was more esteemed, than he.

His heart was wholly in his profession, and the welfare of the Association.

No duty was too onerous when it was felt to be for the public good. Big-hearted, loyal friend and wise counselor, we shall miss him sorely.

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THE DOCTOR'S CONTRIBUTION.

In this world's war, your service is absolutely essential.

The medical officer bears the same relative position in war as in peace in that he is a conservator of health and life.

Through his skill, thousands of men receiving slight casualties, are returned to the fighting force, thus conserving the physical strength of the army.

In Base, Field and Evacuation Hospitals, doctors are as essential as in civil institutions, where the sick and injured are cared for.

As regimental surgeons and on transports and in the Sanitary Corps, must the Government have doctors if we are to terminate this war successfully.

Your contribution to your country at this critical time is **your service** which you can

give for the period of the war as an officer in the Medical Reserve Corps. That your country needs you, is best answered in that she is calling you **now**.

The fighting forces are constantly expanding and such expansion calls for additional doctors and even with the troops now in training and under mobilization (about two million) the Surgeon-General has not enough doctors to fill the requirements.

Secure an application blank at once; fill it out and present it to your Examining Board, or the chairman of your local Committee of National Defense, Medical Section. Do not live to regret that you did not have a part in your country's great struggle for democracy which means **Liberty**.

YOUNG PHYSICIANS, YOUR OPPORTUNITY.

Never again in the history of medicine in this country will such an opportunity be afforded you to serve your country as well as the best interest of yourself.

The experience which you will gain by being commissioned in the Medical Reserve Corps and seeing active service, will be worth more to you in a professional way than you could acquire in years of practice in civil life.

The pay granted to officers in the Medical Reserve Corps is sufficient not only to cover all needs, but enable you to lay aside a comfortable balance, and while the older men in the profession have come forward, it is to the younger men that the greatest benefits accrue.

The experience will prove broadening both professionally and mentally. With this experience and the thought that you have served your country in time of need, you will return to civil life and receive the further benefits from your patients, friends and acquaintances, always accorded to one who has been so prominently individualized as this opportunity will afford.

GONE TO WAR.

Some three hundred or more of the members of the Medical Association of Georgia have been or will be called into the Army or Navy Medical Service. This means that our membership will suffer a loss of about one-fifth of its total unless some steps be taken to retain the names of these three hun-

dred members on the roll. The Association can not afford any such loss of members; those who give themselves to the service of their country should have their membership in the Association insured.

Let every county society pay the membership dues of its members who have gone to war when dues become payable on January 1, 1918.

THE USE OF SOME SIMPLE THINGS IN SURGERY.

1. **"Cements" for the removal of foreign bodies** from urethra—chiefly stone. Pass a full-sized endoscopic tube with round, not oblique, end, down to body and fix the latter by finger behind it from the outside. Remove moisture by cotton-wool. Melt some "elastic glue" and dip the pen end of a pen-handle therein; quickly pass this down the tube and retain in contact with the body for some time. Withdraw tube and pen-handle together. In the only case I tried this it was successful. Cold externally would make the "cement" set better, and perhaps other things (pitch, etc.) might stick firmer still. Forceps nearly always tear the mucous membrane. The same device might be used for the ear.

2. **A Condom** tied over a catheter, lubricated, passed and inflated, is useful for urethral or prostatic hemorrhage. Perhaps likewise for epistaxis.

3. **A wine or whiskey bottle** containing hot water, and kept pressed to the perineum for some hours, the night of the day an instrument is passed, very materially aids the absorption of stricture, and is much more striking than fibrolysin; containing cold water it is the best means of subduing the erethism of inflammation. It is efficient in pruritis ani.

4. **An elastic bandage** applied at proper time after a hydrocele is injected (iodine and carbolic acid), by keeping the layers of tunica vaginalis in apposition, will often lead to radical cure.

5. Tinct. iodi painted on the hands, over this tinct. benzoin, co., and over this iodine again, is no mean substitute for gloves.

6. **Extemporary specula, etc.** The handles of two toothbrushes are an excellent anal speculum; the loop ends of hairpins bent at right angles, good nasal. Two tea-

spoons bent back $1\frac{1}{2}$ in. from bowls make a bladder speculum. Dinner forks bent forward at prongs are the best wound retractors.

7. **The end of a scalpel handle** flattened more, rounded off, and serrated forms a much needed dissector (separating bladder, etc., from adhesions).

8. **Any thick-walled small rubber tube** cut very obliquely at one end, the edge of the ellipse being smoothed off by a heated knife blade, constitutes, when well lubricated, a capital catheter.

9. **A whalebone stylet** bent into coudee shape in hot water and passed into this or into any rubber catheter, makes the best coudee catheter.

10. **Bristle and wire pipe cleaners**, pulled to and fro through catheters, are the best cleaners of their lumens.

11. **A tuning-fork** is useful in diagnosis of fracture.

12. **The air balloon of a small football** under a T bandage and inflated by a cycle pump makes the most efficient perineal pressure, and above the pubis the best nterine. A child's stout air balloon makes a Petersen's bag.

13. **A strip of lint** tied round the root of the penis and embracing the scrotum behind the testes is the handiest contrivance to which to attach the threads of a retained catheter.

14. **The hair of women** in scalp wounds, after disinfection of the parts by iodine, can be used as sutures by tying bundles of the hairs together. As far back as my student days I used this (and with no more sepsis than with ordinary modes) in Dublin, a city then distinguished for its lacerated scalps.

15. **A stout stick** under the bent knees, the ends connected to the top of the operating table by two bandages, does for a Clover's crutch.—James MacMunn in The British Medical Journal.

ARMY SURGEONS—NOTE!

This JOURNAL will be sent subscribers who are in military service at home or abroad, without additional expense, on receipt of full military address. Keep your address up to date by dropping a card to the Journal of the Medical Association of Georgia, Augusta, Ga.

THE CALL TO THE COLORS—SPECIAL SERVICE IN ANESTHESIA.

With the call to the Colors resounding throughout the homeland, anesthetists have been and are now responding with alacrity. Medico-military necessity as well as the continued welfare of the civilian population will make extended and tremendous demands on the medical profession at large and on the members of certain specialists in particular. Many anesthetists are already doing their bit in the war hospitals behind the far-flung battle lines of Flanders and France. Many more are required and these are promptly requesting commissions from the Surgeon-General, indorsed with a plea for immediate service, which will, no doubt, be accorded them.

Major Grayson P. Murphy, heading the Red Cross Commission to France, recently cabled for a shipment of 100,000 half-pound tins of ether and for the machinery, operatives and material for establishing a large nitrous oxid-oxygen plant in France, as this form of surgical narcosis will be routinely used in the graver operations. The fact that this difficult technic will be extensively employed is evidence enough that many experts will also be required for its administration. These experts can not be withdrawn from the hospitals at home without leaving competent and trained anesthetists to take their place. Consequently those who anticipate entering service should provide some one to do their work during their absence.

The problem involved in maintaining the supply of anesthetists is such that the interest of the National Council of Defense, the Red Cross, the Surgeon-General, the allied war missions, has been sought in co-operation with the efforts of the organized anesthetists to work out an efficient plan.

Women physicians, specializing in anesthesia, will have an opportunity of serving and should immediately communicate with Dr. Alma Vedin, 224 East Fifteenth Street, New York City, who is chairman of the subcommittee on Anesthetists of the Women's War Mission, organized under the direction of Dr. Rosalie Slaughter Morton, who has already been decorated by the French Government for her services in the war zone.

Anesthetists should make every effort to meet the grave responsibilities that are at hand. That they will do so is a foregone conclusion.—McM., in A. J. of S.

THE SOUTHERN AT MEMPHIS.

The greatest medical meeting ever held in the South, and one of the best ever held anywhere, was at Atlanta last year when eighteen hundred doctors of some sixteen states came together for the tenth annual meeting of the Southern Medical Association. The eleventh annual gathering of the members of this virile organization will be at our own proud city of Memphis on November 12-13-14-15, just one month off. *As a meeting was the greatest ever, the Memphis meeting is going to be still greater. Every doctor in Tennessee should consider it a part of his duty to help make it so.*

The program in every section, we are told, is full of good things from good men. In addition to the usual scientific addresses there are to be patriotic addresses from some of the nation's greatest orators. And the whole crowd is going to sing! Tune up your vocal chords and go down to Memphis prepared to join in the great chorus composed of loyal Americans, who are going to sing the songs of a patriotic South and a patriotic Nation as they were never sung before.

British and French army surgeons will be there and will contribute to the program, presenting accounts of the wonders of war surgery and medicine as developed during these last four years. And we hope, though the official announcement is silent as to this, that our good United States Army is going to be represented, too.

There's going to be a Malaria Conference on the 12th, the Southern States Association of Railway Surgeons will meet on that day, too, and alumni reunions galore will be a leading feature.

Memphis is going to take fine care of the meeting—that's the Memphis way of doing. Let's all go and help make the meeting the very best on record—for our own sake, for the sake of the Southern Medical Association, and for Memphis and the Memphis doctors.

While patriotism demands sacrifices, it also provides opportunities. This is the time to have a hand in recasting the ideals of the world so that all countries, henceforth, may be more desirable to live in.

Have you asked yourself whether YOU ought to join the Army or Navy Medical Reserve Corps?

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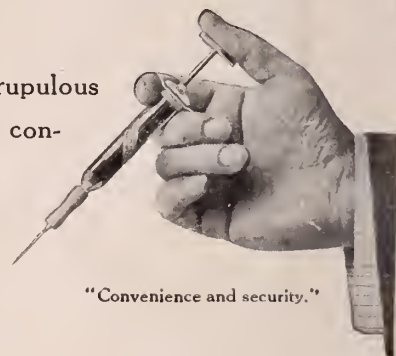
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No. 7

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SOME ASPECTS OF RENAL SURGERY.*

Edward G. Jones, M.D., Atlanta, Ga.

That is a serious indictment against the general surgeon, which charges that from one-sixth (1) to one-third (2) of persons who have been operated on for renal or ureteral stone have been operated on previously, **for the same symptoms without relief.** Prior to the refinements of roentgenography and the advent of pyelography such mistakes had some justification; but to state that **now** one patient out of six with symptoms due to kidney and ureteral lithiasis has had his appendix removed, or his gall-bladder drained, or his abdomen explored, or his kidney suspended, or some other operation directed at his present discomforts without relief is a humiliating commentary

—not so much on the difficulty of judgment and the fallaciousness of experience, as on the alleged alertness of the present day surgeon. And, without being able to prove it, one is inclined to the opinion that it is only within the past semi-decade that the larger clinics of the country have sinned less in this respect than the average honest surgeon of good judgment. Operators who have limited their work to the genito-urinary tract doubtless have been less subject to this criticism than have general surgeons.

One is further surprised to learn that in the series reported by Braasch the offending stone was in the left kidney or ureter in more than one-third of the instances where in this mistake was made; and that of the 55 persons with stones in the left kidney who had been wrongly operated on previously 21 had had appendix or gall-bladder operations.

It should be noted, however, that Braasch's study covers operations for 18 years prior to 1916; and certainly one may be allowed the consolation of assuming that were his statistics confined to the last five years when diagnostic expedients everywhere have been

(1) Cabot, *Jonr. A. M. A.*, Oct., 1915. (2) Braasch *Surg. Gyn. and Obst.*, Jan., 1917.

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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better and more generally used, his records as to previous unwarranted operations would be less embarrassing. Indeed, in Cabot's statistics covering the seven years following January 1, 1907, only one-sixth of his patients had been subjected to previous operations for relief of symptoms afterwards proved to be due to stones in the kidney or

ILLUSTRATIVE CASE No. 1. Miss P. C. Age 23. Referred by Dr. J. A. Guinn, Conyers, Ga., 2-22-17.

Chief Complaint: Pain in right side.

Family History: Unimportant.

Past History: Measles, whooping cough, chicken pox and scarlet fever during early childhood. Menstruation began at 14, reg-

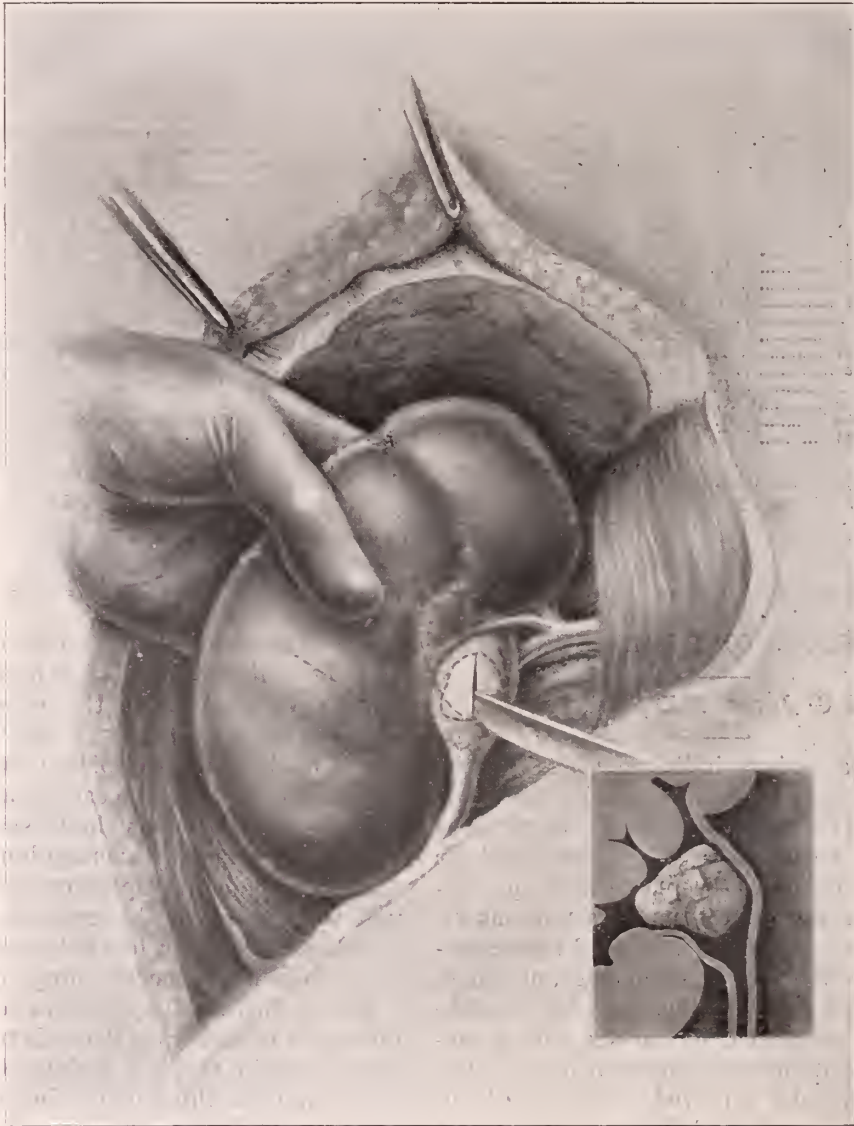


Fig. 1. Pyelotomy for pelvic stone. Posterior surface of kidney is shown. See illustrative case I.

ureter. But even his report is an accusation of mortifying severity.

We cite the following case as one which, without careful roentgenography, would very probably have led us into error. (See figs. 1 and 2):

ular, quite painful, occasionally requires opiate.

Present Illness: October, 1912, patient was seized with dull pain in right side, which subsided within a few hours. One year later there was a similar attack. During 1915 and

1916 there were six or eight seizures, increasing in severity and requiring opium. The location of this pain seems to the patient to be rather nearer the front than the back of the body, and occupies the whole territory from the ribs to the groin. She is not able to say where the distress originates, but believes she suffers more just below the costal margin. She is usually nauseated and vomits. Sometimes morphia. There has been no



Fig. 2. Showing single stone in kidney pelvis. Removed by Pyelotomy. See case I.

known hematuria, and no bladder irritation. No hematuria. There is much sour belching and heartburn, which she thinks is most troublesome immediately after eating. Patient describes several attacks which she has called acute indigestion. She thinks general abdominal soreness follows these attacks, but can not recall if it is localized at any one spot. No chills. Thinks no fever. Has never passed a stone from her bladder.

Physical Examination: Patient short and fat. Heart and lungs normal. There is moderate tenderness in appendix region, and also in the upper abdomen both back and front, though this last named tenderness seems to be more marked anteriorly than posteriorly.

Urine: Negative, except for trace of albumin, and an occasional red blood cell.

Blood: Normal.

X-Ray: 2-27-17, shows square shadow one-half inch in diameter opposite transverse process of the second lumbar vertebrae.

Diagnosis: Pelvic stone.

Treatment: 3-10-17. Pyelotomy. Recovery.

Remarks: This history and physical examination when considered in connection with the fact that an appendix attack is much more probable as an abstract proposition in a patient of this sort would incline one to suspect the appendix as the most probable cause of the symptoms. The patient's physician, while debating the possibility of kidney or gall-bladder trouble, had all along been impressed with the view that she had appendicitis; and until the X-ray examination was made, our own inclination was to agree with his suspicion.

One can not fail to be impressed with the frequency with which a ureteral stone will pass—either spontaneously or with the encouragement of a man skilled in the use of ureteral instruments. It is certainly not good surgery at present to remove a stone from the ureter by operation unless it is plainly too large (from accretions since its lodgment) to pass, or unless a small stone is known to have been in the same position for some time (probably encysted); and in the latter instance efforts to dislodge the stone with a catheter or to dilate the normal ureter, or a stricture below the stone, always should have been practiced prior to open operation.

Such statements as one occasionally hears to the effect that only 1 or 2 per cent of ureteral stones will require operation can scarcely be credited. Nevertheless, late reports from the large clinics of the country as well as the individual experiences of skillful technicians in ureteral instrumentation are stimulating; and the indications from all reliable sources are that the majority of stones small enough to have entered the ureter will pass spontaneously, and that of the remainder quite a percentage can be induced to pass. Braasch (3) states that successful endoscopic efforts have saved 22 per cent of ureteral stone patients from operation in the Mayo Clinic, and his skill can, of course, not be brought in question.

In view of the natural tendency of ureteral stones to shift their position or to escape into the bladder one should never operate without a roentgenogram as immediately pre-

ceding as possible. The same caution applies to small renal stones. Nor can one depend on the absence of an attack of colic to prove that the calculus has not moved. Of seven patients with proved lithiasis of renal origin who were in the hospital for operation during a recent period of six weeks, three pass-

Family History: F. 1. & w. M. d. at 34 of "female trouble." B. d. at 21 of "autointoxication" (septicemia?)

Past History: Measles and whooping cough as child. Gonorrhoea 11 years ago; thinks entirely cured. Denies syphilis.

Present Illness: Three years ago patient

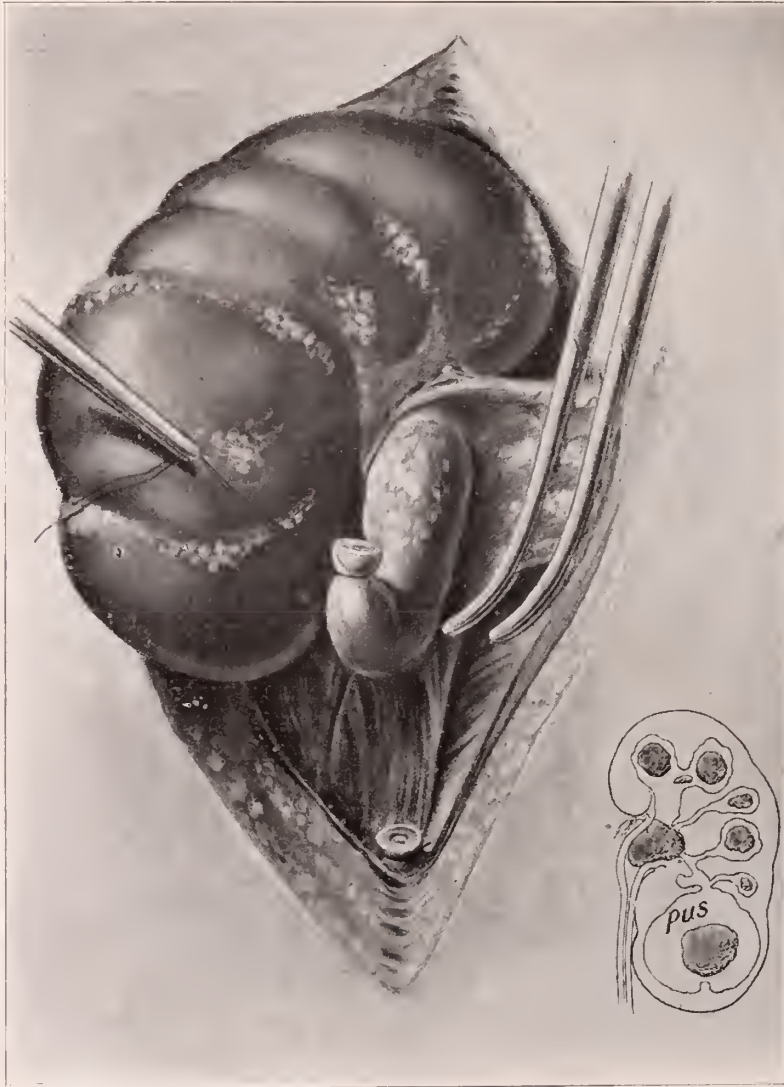


Fig. 3. Nephrectomy for multiple stones with extensive infection. A third forceps is set nearer kidney before pedicle is cut distal to two clamps shown.

ed the stone or stones while under observation either spontaneously or as a result of endoscopic efforts.

The histories below will illustrate the probability mentioned:

ILLUSTRATIVE CASE No. 11. Mr. L. V. L., Atlanta, Ga. Age 26. Switchman. Married ten years. 2-15-17.

Chief Complaint: Aching in left loin with attacks severe colic.

began to have aching in left loin and back. Frequent exacerbations, especially on exertion. Soon began to have severe attacks requiring morphine, and radiating downward to both testicles. In last 18 months says he has had perhaps 25 separate seizures. Thinks he has not passed a gravel per urethram. No definite history of bladder irritation during attacks. Frequently with most severe seizures patient has "cramp colic" in upper ab-

domen and vomits. Attacks always on left side. No chills. Don't know if fever. Attacks come on both suddenly and gradually, suddenly, usually, if patient jars himself severely, as, for example, by jumping off car; disappear gradually. Lifting, etc., frequently induces seizure. Thinks some diminution in urine during severe pain, but not altogether clear. Rather thinks there is moderate polyuria following attacks—frequently with blood.

Physical Examination: Well nourished, healthy-looking man. No adenopathy. Riggs—tongue clean. Pupils equal; react to 1. & a. Heart and lungs normal. Abdomen



Fig. 4. Showing a collection of stones in the kidney pelvis passed spontaneously while patient was in hospital. He had been suffering with attacks of renal colic for three years without ever having passed a calculus.

flat, symmetrical. Some tenderness (imaginary?) in left loin. Temperature 98.2. Blood pressure 140.

Urine: Moderate amount pus and blood, trace albumin.

X-Ray: Left, shadow one-half by three-fourth inches, kidney region. Not clear if shadow is single stone or several stones. Right kidney region negative.

Remarks: (See fig. 4.) This patient has been kept in hospital for collection of additional data. On third day after admission with a history of many attacks during three

years without having passed a stone, he had a severe and prolonged seizure and passed calculi spontaneously. X-ray gave negative result following day patient was dismissed.

ILLUSTRATIVE CASE No. 111. Mrs. E. M. Admitted to Grady Hospital 2-4-17.

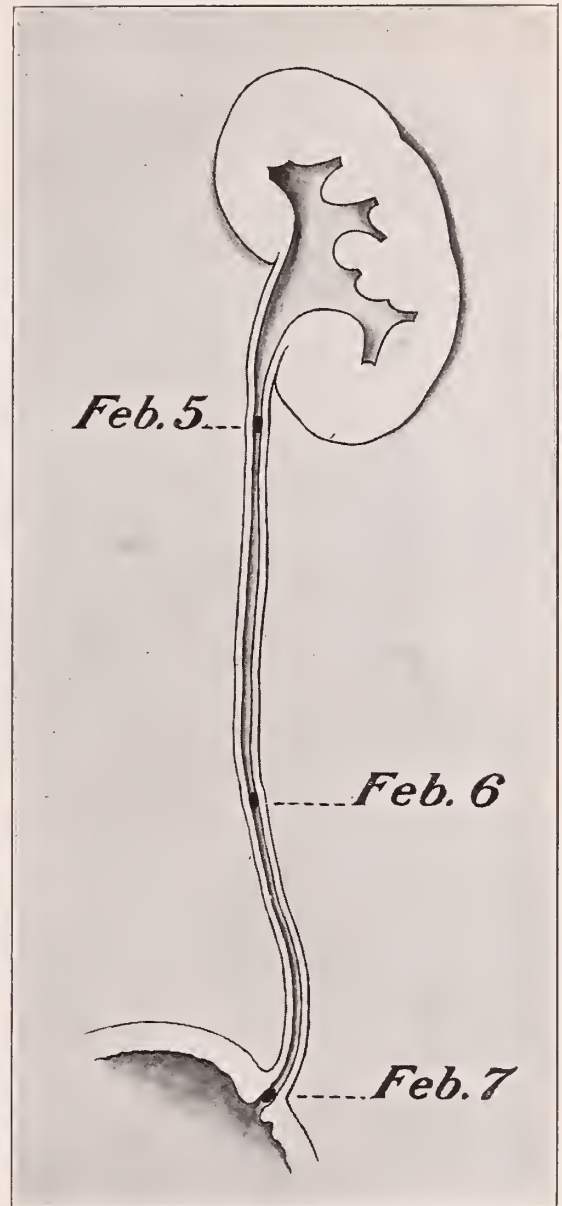


Fig. 5. Illustrating points at which stone was found lodged in Case III.

Chief Complaint: Acute stabbing pain in left side.

Family History: Omitted to save space.

Past History: Omitted to save space.

Present Illness (abstracted): Six years ago severe cramping pain in left back and side transmitted along ureter. Attacks lasting

1-3 hours occurred 3-4 times daily for two weeks. Hematuria. Two small stones passed. No further trouble until seven days ago, when she was seized as before with agonizing pain radiating to external genitals and moderate hematuria. Attacks have come and gone since. Two days ago severity of pain moved to a point just above the left



Fig. 6. Showing stone in extreme lower end of ureter with catheter passing same. Removed by open ureterotomy.

pelvic brim. No stone passed. Much nausea.

Physical Examination (abstracted): Rigidity left side abdomen. Quite tender over kidney and ureteral region on this side.

Urine: Traces albumin. Abundant pus. No blood.

Leucocytes: 10,00.

Temperature: 99.4. Pulse 100.

2-5-17: X-Ray—small shadow in line left ureter between third and fourth lumbar vertebrae. Abundant water ordered. Patient has been comfortable for past twelve hours.

2-6-17: Severe pain last night lasting eight hours. X-Ray now shows shadow same size at brim of pelvis.

2-7-17: After above note pain subsided until this a. m., when she suffered for six hours. Following this seizure X-ray showed shadow same size apparently in extreme lower end of ureter.

2-8-17: Shortly after last X-ray patient was seized with colic lasting one-half hour. Soon after colic ceased she passed stone per urethram. Subsequent X-ray negative.

2-9-17: Dismissed.

Remarks: Fig. 5 presents graphically the findings recounted in the above history. This patient presents a running comment on the points at which ureteral stones are prone to lodge and upon the probability of such a stone passing.

ILLUSTRATIVE CASE No. IV. Mr. H. S. H. Referred by Dr. Morgan, Piedmont, Ala. Age 45. Mining engineer. 4-17-15.

Family History: Unimportant, except father died at 64 of angina pectoris.

Past History: Diseases of childhood, including diphtheria at 6.

Present Illness: In 1897 patient had a severe attack of pain in the right side about which his memory is not very clear. In No-



Fig. 7. Showing tip of catheter (Dr. Boyd) reaching to a shadow which may be a stone. Several other shadows in the neighborhood, probably phleboliths. See illustrative case No. 5.

vember, 1914, there was a sudden severe seizure originating in the right loin and radiating downward toward the bladder. Required morphine. Can not recall if there was blood in the urine. No chill. Thinks no fever. Pain lasted three or four hours, and subsided gradually. In February, 1915, and in April, 1915, there were seizures similar to the one above described. No blood in

the urine. No bladder irritation. So far as the patient can recall the pain has always been in the same place, in the neighborhood of the right kidney and radiating downward along the ureter. He can not recall if there is diminished urine during the attacks,

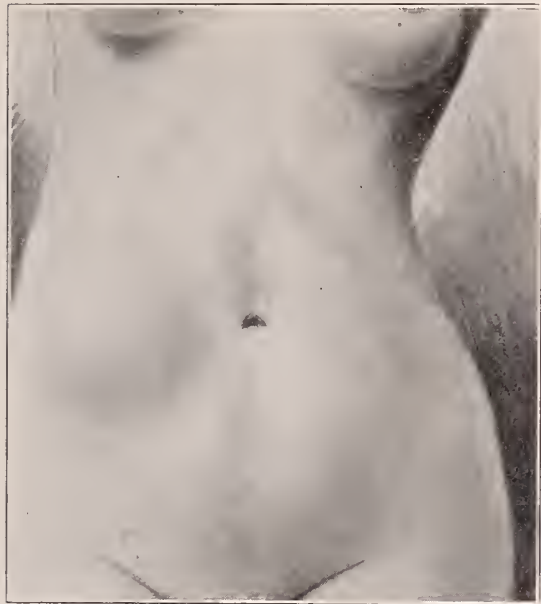


Fig. 8. Showing swelling in illustrative case No. 5.

or polyuria following the attacks.

He now has more or less heavy discomfort in the right loin, increased by physical exercise. He has never had attack of pain on left. Headaches more or less frequently.

Physical Examination: Spare, healthy looking, intelligent man. Beginning areus. Pupils equal react to l. & a. Teeth good. Tongue clean. Heart, second sound accentuated at apex. Lungs normal. Abdomen flat. Slight tenderness in right kidney region, and downward along ureter.

Blood Pressure: 165!

Urine: Normal, except for occasional pus cell.

X-Ray: 4-18-15, shows a shadow 1 cm. in diameter very near the lower end of the ureter on right. Later X-ray shows a metal catheter to lie in contact with shadow. No colic during two days following catheterization.

Treatment: 4-21-17, stone removed by open operation extra-peritoneally. Recovery.

Remarks: (See Fig. 6.) It can not, of course, be known how long this stone had been in the ureter. It is not probable that

it lodged there eighteen years ago—if, indeed, there was an attack of renal colic at that time. The stone was evidently considerably larger than the normal caliber of the ureter, so that its passage spontaneously or as the result of instrumentation seemed improbable.

ILLUSTRATIVE CASE No. V. Mrs. C. B. R. Age 35. Admitted to Grady Hospital March 12, 1917.

Chief Complaint: Pain in back. Marked dysuria. Hematuria. Mass lower right abdomen.

Past History: Diseases of childhood. Malaria (?) Rheumatic pains at times. Hemorrhoids for past year. Eight full-term children. Moderate leucorrhoea. Constipation.

Present History: Trouble began eight days ago (3-3-17), with a constant desire to empty bladder, and pain in the lower right abdomen. Grew worse for about twenty hours, at the end of which time two small



Fig. 9. Showing enormous branched stone which was removed by nephrotomy. Nephrectomy should have been done.

stones the size of a grain of wheat were passed. Patient was reasonably comfortable for a day or two when there began to be felt an uneasy sensation in the right lumbosacral region, which grew worse and finally developed into a severe pain in the right back and loin. Following passage of stones



Fig. 10. Showing injection of kidney and ureter through a sinus in the loin, which had been made several months previously for an "abscess." The stone was detected by means of a sound passed through the sinus, and was removed with forceps after the sinus had been somewhat enlarged.

hematuria began and lasted two days. The pain in the back has persisted. Dysuria cleared up for two or three days, but reappeared one day ago, and is identical with that which she suffered during the passage of the stones mentioned above. There has been a soreness throughout the whole abdomen for the past eight days. Two days ago a mass appeared in the right side. Patient believes she has had polyuria at times following periods during which the amount of urine was decreased.

Physical Examination: Patient rather spare. Pupils react to l. & a. No adenopathy. Heart and lungs normal. Occupying a position in the middle right abdomen there is a tender rounded mass, which gives a sense of fluctuation, and which descends somewhat on inspiration. It can also be pushed somewhat upward.

Leucocytes: 18,000.

Urine: Shows many pus cells, no blood, and is otherwise normal.

Temperature: Ranges from 99 to 103.

X-Ray: Both kidney and ureteral regions exposed. Several shadows are shown about the lower ends of both ureters; probably

phleboliths. Ill-defined shadow in neighborhood of mass noted at physical examination.

March 19, 1917: Temperature has declined steadily. Mass has decreased in size. Pain is less severe than at last examination.

March 20, 1917: (Dr. Boyd) Cystoscopic examination. Ureteral orifices look normal. Catheter goes 6 cm. into the right ureter, where it meets an obstruction, which it will not pass. Lower end of the ureter below this obstruction is large and loose about catheter. Garceau catheter passes in 6 cm. without the orifice becoming tight about it, then it stops. Thorium injected through catheter and X-ray picture taken. Specimen of urine collected from bladder through cystoscope, and sent to laboratory for examination, pus and bacteria.

The X-ray plate (see fig. 7) shows that the ureter was not injected above the catheter, but that the solution regurgitated into the bladder. The tip of the catheter reaches exactly to a shadow which looks more like that of a stone than other shadows in the neighborhood.

March 29, 1917: (Dr. Boyd) No. 8 catheter passed all the way up ureter without trouble. Gaugeau catheter also passed readily into the ureter, and the number twelve part passed beyond where obstruction was formerly met. Not much pain as it passed. There is no history of a stone having been passed since last examination.

March 31, 1917: Patient states that since treatment on the 29th she has had no trouble at all. Temperature has not risen above normal since March 19th.

Remarks: Investigation in this case was not concluded. It would be desirable to know if this particular shadow which may have been a ureteral stone is still present in the same place, or if her obstruction was due to a stricture without a stone. She was allowed to go home from the hospital upon the promise that she would return in about two weeks for further observation.

The symptomatic diagnosis of renal calculus was in time past based upon colic, lumbar pain, vesical irritability and urinary findings; but, of course, it is quite understood that the colic and other symptoms mentioned do not necessarily mean that a calculus exists. What is to be said at present about the presence or absence of these symptoms when stone is present? From various sources of information it seems that

while colicky pain is present in some two-thirds of patients, in only one-third is it sufficiently severe to bring the patient to the physician.

Cabot (4) reports the presenting symptoms other than colicky pain to occur in the following order of frequency: dull pain in kidney region, pain in the lower right quadrant, backache, pain in bladder region, hematuria, vague abdominal pain, etc. In his series (which included both renal and ureteral stones) the pain was referred along the ureter in one-third of the patients, and to the testicle quite infrequently.

A point constantly to be kept in mind is that the location of the pain in the kidney region by no means indicates that the stone is in the kidney instead of the ureter. Indeed, Braasch believes that renal colic is more often caused by a stone lodged in the ureter than in the kidney. When we couple this statement with the fact that in 5.7 per cent of cases (Braasch) there is a stone in the ureter as well as in the kidney we are impressed with the wisdom of exposing the whole ureter with the kidney to X-ray examination.

Particularly interesting are the cases of pain referred to the gall bladder and appendix region. When we reflect that in not less than 25 per cent of individuals the pain from renal calculus is referred to the neighborhood of one or the other of these organs we are not surprised that these alluring areas of operative endeavor are crowded with melancholy evidences of surgical fallibility.

Vesical irritability is probably much more common in men than in women. It is worse during the attack and may amount to strangury. It seems to be as frequent in renal as in ureteral stones. It is present apparently in from 50 to 75 per cent of individuals—indeed, more frequently than is definite renal colic.

Visible blood in the urine during or following an attack of colic, or even without frank colic, is, of course, very suggestive. It occurs without any pain or with only indefinite discomfort in about 14 per cent of cases of renal stone. Altogether this symptom is present in upwards of 50 per cent of persons. Microscopic blood is present certainly in 75 per cent of cases, but the presence of a few cells in the urine should not be interpreted as too significant. Indeed,

the Mayo Clinic reports that in 500 consecutive cases examined routinely who had neither symptoms nor any clinical evidence of kidney lesion microscopic blood was found in 28 per cent. The presence of a few red cells in the urine without proper additional clinical support has led to incorrect interpretation of doubtful X-ray shadows, and should be guarded against.

We are impressed with the wisdom of nephrectomy as against nephrotomy in many instances when one is tempted to try to save the affected kidney. Given a kidney on the other side whose presence and functional activity have been proved there will be little danger in removing the doubtful kidney. Fig. 9 illustrates an instance in which the stone was removed by nephrotomy two years ago, but a suppurating sinus exists up to the present, the patient refusing further interference. Fig. 3 represents a case in which we are convinced the nephrectomy done was much wiser than a nephrotomy would have been.

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President—E. L. Merrill.....	Turin		
V.-Pres.—T. S. Bailey.....	Newnan		
Sec.-Treas.—Myron H. Farmer.....	Newnan		
Delegate—			
Myron H. Farmer.....	Newnan		
W. L. Woodruff.....	"		
F. I. Welch.....	"		

E. L. Merrill	Turin
J. M. Tribble	Senoia
D. A. Haney	Newnan
P. J. Peniston	"
T. B. Davis	"
W. A. Turner	"
T. S. Bailey	"
A. A. Barge	"
O. D. Adamson	"
C. C. Elliott	Sargent
A. Roy Hogg	Haralson
W. A. Post	Grantville
W. F. Culpepper	Senoia

CRISP COUNTY.

President—W. A. Miller	Arabi
V.-Pres.—W. E. Edwards	Cordele
Sec.-Treas.—Ford Ware	Cordele
Delegate—T. J. McArthur	Cordele
S. F. Williams	Cordele
T. J. McArthur	"
V. O. Harvard	Arabi
J. S. McKenzie	Cordele
B. Daniel	"
A. J. Wheelhel	"
T. E. Bradley	"
P. L. Williams	"
W. A. Miller	Arabi
Tip Cox	"
A. R. Heyward	Warwick
H. C. Flournoy	"
M. R. Smith	Cordele

DECATUR COUNTY.

President—A. E. B. Alford	Bainbridge
V.-Pres.—N. L. Spengler	Donalsonville
Sec.-Treas.—P. M. Lewis	Bainbridge
Delegate—S. Ehrlich	Bainbridge
P. M. Lewis	Bainbridge
R. L. Z. Bridges	Brinson
E. C. Bridges	Donalsonville
G. T. Clark	Bainbridge
S. A. V. Christophine	Attapulgis
A. E. B. Alford	Bainbridge
S. J. Chesnut	"
A. D. Farber	"
J. E. Toole	"
Thomas Chason	Donalsonville
J. D. Chason	Bainbridge
Gordon Chason	"
R. F. Wheat	Amsterdam

DeKALB COUNTY.

President—J. F. Pitman	Decatur
V.-Pres.—W. S. Ansley	"
Sec.-Treas.—T. S. Ussery	"
Delegate—W. S. Ansley	"
C. E. Pattillo	Decatur
J. F. Pitman	"
W. S. Ansley	"
T. S. Ussery	"
C. L. Allgood	Scottdale
A. R. Watkins	Chamblee
M. F. Sweet	Decatur

DOOLY COUNTY.

President—	
Vice-President—	
Sec.-Treas.—F. E. Williams	Vienna
Delegate—	
H. A. Mobley	Vienna
T. F. Bivins	"
V. C. Daves	"
F. E. Williams	"
J. L. Lee	Pinehurst

DOUGHERTY COUNTY.

President—W. L. Davis	Albany
V.-Pres.—A. W. Wood	"
Sec.-Treas.—John A. White	"
Delegate—W. L. Davis	"
W. W. Bacon	Albany
J. M. Barnett	"
N. E. Benson	"
W. S. Cook	"
W. L. Davis	"
A. H. Hilsman	"
J. C. Keaton	"
C. E. Newell	"
J. A. Redfern	"
Hugo Robinson	"
E. F. Sapp	"
L. E. Welch	"
A. W. Wood	"
R. J. Pearson	"
John A. White	"
Melgie Ward	"

ELBERT COUNTY.

President—W. J. Matthews	Elberton
V.-Pres.—A. C. Smith	"
Sec.-Treas.—L. P. Eberhardt	"
Delegate—D. N. Thompson	"
D. V. Bailey	Elberton
F. L. Adams, R. F. D.	"
W. J. Matthews	"
A. C. Smith	"
A. S. J. Stovall	"
T. H. Gaines, R. F. D.	"
G. A. Ward, R. F. D.	"
D. N. Thompson	"
A. S. Johnson	"
L. P. Eberhardt	"
J. E. Johnson	"
O. B. Walker	Bowman

EMANUEL COUNTY.

President—W. B. Holmes	Wadley
V.-Pres.—A. C. Johnson	Garfield
Sec.-Treas.—J. B. Carter	Blundale
Delegate—J. B. Carter	Blundale
George L. Smith	Swainsboro
J. H. Chandler	"
T. E. Blackburn	"
J. M. Nueez	"
R. C. Franklin	"
E. A. Chance	Garfield
A. C. Johnson	"
B. F. Johnson	"
J. D. Bailey	Summertown
D. C. LaGrone	"
J. B. Carter	Blundale
W. L. Harvey	Bartow
W. B. Jordan	Bartow
J. O. Rountree	Canoochee
M. F. Mosley	Oak Park
E. T. Coleman	Graymont
V. E. Franklin	Graymont
C. R. Riner	Summitt
R. L. Sample	Summitt
W. B. Holmes	Wadley
L. P. Youmans	Swainsboro
R. E. Graham	Stillmore
L. Ivey Lanier	Wesley

FLOYD COUNTY.

President—R. H. Wicker	Rome
V.-President—J. T. McCall	"
Sec.-Treas.—R. O. Simmons	"
Delegate—H. A. Turner	"
W. P. Harbin	Rome
Mabel S. Schreiner	"

S. R. Methvin.....	Lindale	C. E. Hall.....	Atlanta
R. M. Harbin.....	Rome	C. W. Gould.....	"
W. L. Funkhouser.....	Atlanta, Candler Bldg.	E. C. Cartledge.....	"
W. B. Floyd, R. F. D. 2.....	Rome	J. C. White.....	"
W. J. Shaw.....	"	W. B. Sharp.....	"
L. P. Hammond.....	"	W. C. Robinson.....	"
A. C. Shamblin.....	"	J. G. Weaver.....	"
R. O. Simmons.....	"	W. P. Nicolson.....	"
J. T. McCall.....	"	H. C. Miller.....	"
A. F. Routledge.....	"	G. M. Niles.....	"
R. P. Cox.....	"	F. D. Sweet.....	"
Charles Hamilton.....	"	E. B. Anderson.....	"
J. C. Watts.....	"	J. B. Carothers.....	"
J. L. Garrard.....	"	E. F. Finsher.....	"
H. A. Turner.....	"	L. H. Muse.....	"
Wm. Delay.....	"	E. D. Shanks.....	"
R. H. Wicker.....	"	J. F. Freeman.....	"
J. J. Ross.....	Mount Berry, Charlotte, N. C.	W. B. DuVall.....	"
M. M. McCord.....	Rome	C. E. Dowman.....	"
J. B. S. Holmes.....	"	F. P. Calhoun.....	"
Clifford Moore, R. F. D. 5.....	"	E. B. Block.....	"
J. P. Ballenger, R. F. D.....	Armurchee	Dunbar Roy.....	"
J. N. Cheney.....	Silver Creek	S. T. Barnett.....	"
N. C. Doss.....	Rome	H. L. Reynolds.....	"
George B. Smith.....	"	J. J. Martin.....	"
J. L. Chandler, R. F. D.....	"	M. S. Eguen.....	"

FORSYTH COUNTY.

President—	
Vice-President—	
Secretary-Treasurer—	
Delegate—	
G. P. Brice.....	Flowery Branch
J. H. Hockenhull.....	Cumming
W. E. Lipscomb.....	"

FRANKLIN COUNTY.

President—W. B. Heller.....	Lavonia	A. P. Flowers.....	"
V.-Pres.—C. B. Lord.....	Ashland, R. D.	M. K. Jenkins.....	"
Sec.-Treas.—B. T. Smith.....	Carnesville	C. E. Murphey.....	"
Delegate—C. B. Lord.....	Ashland, R. D.	L. P. Baker.....	"
S. D. Brown.....	Royston	J. N. Brawner.....	"
H. L. McCrary.....	"	L. C. Fischer.....	"
J. O. McCrary.....	"	L. M. Gaines.....	"
F. G. Moss.....	"	Michael Hoke.....	"
C. B. Lord, R. D.....	Ashland	G. C. Mizell.....	"
H. W. Birdsong.....	"	G. W. Quillian.....	"
J. M. Freeman.....	Lavonia	K. E. Foster.....	College Park
W. B. Heller.....	"	A. W. Stirling.....	Atlanta
J. R. Brown, R. D.....	Martin	C. W. Roberts.....	"
G. F. Bush, R. D.....	Carnesville	M. T. Davis.....	"
G. M. Parker.....	"	Theodore Toepel.....	"
J. R. Hall.....	"	A. H. Bunce.....	"
B. T. Smith.....	"	G. K. Varden (dead).....	"
J. H. Terrell.....	Canon	G. H. Paine.....	"
B. F. Bond.....	"	K. L. Reid.....	"
George T. Ridgeway.....	Royston	Cecil Stockard.....	"

FULTON COUNTY.

President—Robert B. Ridley.....	Atlanta	W. C. Warren.....	"
V.-Pres.—Hugh M. Lokey.....	"	F. W. McRae.....	"
Sec.-Tr.—E. P. Merritt, Candler Bldg.....	"	L. W. Childs.....	"
B. T. Beasley.....	Atlanta	H. M. Lokey.....	"
Grace Kirkland.....	"	W. M. Dunn.....	"
Luther H. Kelley.....	"	Frances S. Bradley.....	Washington
Edgar H. Greene.....	"	W. W. Blackman.....	Atlanta
Paul T. Jones.....	"	F. K. Boland.....	"
R. E. Hinman.....	"	B. S. Bomar.....	"
T. L. Corley.....	"	M. G. Campbell.....	"
Richard R. Daly.....	"	E. G. Jones.....	"
E. C. Davis.....	"	R. B. Ridley, Jr.....	"
G. O. Whelchel.....	"	S. R. Roberts.....	"
Walpole Brewer.....	"	J. E. Sommerfield.....	"
E. P. Merritt.....	"	W. L. Ballenger.....	"
J. S. Derr.....	"	W. A. Arnold.....	"
E. D. Highsmith.....	"	C. A. Rhodes.....	"
		T. B. Armstrong.....	"

L. C. Rouglin.....	Atlanta	O. D. Hall.....	Atlanta
Robin Adair.....	"	W. S. Aiken.....	"
Barron Johns.....	"	S. T. Brown.....	"
Archibald Smith.....	"	F. H. Sanders.....	"
C. E. Lawrence.....	"	J. O. Kinard.....	"
H. J. Vaughan.....	"	C. M. Mashburn.....	"
C. M. West.....	"	A. F. Caldwell.....	"
I. W. Irvin.....	"	J. H. Vermilye.....	Kirkwood
J. G. Carter, Jr.....	"	J. R. Barfield.....	Atlanta
H. W. Snyder.....	"	D. J. Manget.....	"
I. C. Deariso.....	"	M. L. Boyd.....	"
L. B. Clarke.....	"	J. C. Johnson.....	"
C. C. Hinton.....	"	G. M. Murray.....	"
J. E. Paullin.....	"	F. G. Hodgson.....	"
Howard Bucknell.....	"	F. M. Sutton.....	"
E. C. Thrash.....	"	H. E. Duffey (Brady Hotel).....	Tulsa, Okla.
J. R. Childs.....	"	W. S. Goldsmith.....	Atlanta
W. E. Person.....	"	W. M. Powell.....	Atlanta
O. O. Fanning.....	"	F. E. Van der Veer.....	"
Alfred Brown.....	"	W. S. Kendrick.....	"
W. E. Barber.....	"	W. F. Wells.....	"
W. A. Selman.....	"	L. T. Pattillo.....	"
G. C. Trimble.....	East Point	W. E. Ragan, Jr.....	"
E. L. Griffin.....	Atlanta	W. M. Ethridge.....	"
G. P. Huguley.....	"	J. N. Ellis.....	"
O. B. Bush.....	"	J. T. Floyd.....	"
E. S. Colvin.....	"	J. B. Fitts.....	"
J. P. Kennedy.....	"	C. E. Ware.....	"
G. D. Ayer.....	"	J. R. McCord.....	"
John Funke.....	"	J. E. Davis.....	"
H. R. Donaldson.....	"	A. F. Brawner.....	"
W. A. Jackson.....	"	A. G. DeLoach.....	"
W. N. Adkins.....	"	J. C. McDougald.....	"
M. T. Benson.....	"	H. C. Sauls.....	"
W. E. Quillian.....	"	F. M. Barfield.....	"
J. G. Earnest.....	"	W. L. Gilbert.....	"
J. W. Duncan.....	"	W. A. Crowe.....	"
W. F. Shallenberger.....	"	C. A. Smith.....	"
J. A. Gentry.....	"	Wm. T. Asher.....	"
W. W. Young.....	"	W. A. Upchurch.....	"
J. W. Roberts.....	"	T. F. Guffin.....	East Point
R. G. Stephens.....	"	Thomas H. Hancock.....	Atlanta
A. L. Fowler.....	"	M. B. Hutchins.....	"
C. J. Vaughan.....	"	H. M. S. Adams.....	"
W. S. Elkin.....	"	J. R. Smith.....	"
C. B. Greer.....	"	John S. Hurt.....	"
W. T. Bivings.....	"	G. F. Spearman.....	"
L. Sage Hardin.....	"	Arch. Avary.....	"
J. D. Thomson.....	"	J. C. Avary.....	"
W. B. Emery.....	"	W. L. Funkhouser.....	"
T. C. Davison.....	"	Howard Hall.....	"
J. G. Smith (Henry County).....	McDonough	G. C. Cole.....	"
Jesse L. Byrd.....	Atlanta	A. H. VanDyke.....	"
James P. McGee.....	"		
Floyd W. McKae, Jr.....	"		
Baxter Moore.....	"	GORDON COUNTY.	
R. T. Dorsey.....	"	President—E. O. Shellhorse.....	Calhoun
C. P. Ward.....	"	V.-Pres.—	
J. W. Turner.....	"	Sec.-Treas.—W. R. Richard.....	Calhoun
C. E. Waites.....	"	Delegate—	
H. W. Minor.....	"	E. O. Shellhorse.....	Calhoun
W. E. Campbell.....	"	C. F. McLain.....	"
O. F. Elder.....	"	J. M. Erwin.....	"
E. G. Pal'enger.....	"	W. R. Richard.....	"
J. H. Neall.....	"	A. L. Horton.....	Ranger
G. H. Noble.....	"	B. W. Fite.....	Resaca
C. E. Rushin.....	"	W. R. Barnett.....	Sugar Valley
W. E. Yankey.....	"	R. L. Rogers.....	Fairmount
N. O. Tribble.....	"	Otis M. Heyward.....	Reeves
C. G. Giddings.....	"	Trammell Starr.....	Calhoun
C. E. Baynton.....	"	G. W. Mills.....	"
Annie L. Sawyer.....	"		
L. Arster.....	"	GRADY COUNTY.	
J. B. Baird, Jr.....	"	President—J. B. Warnell.....	Cairo
M. McH. Hull.....	"	Vice-President—	
W. F. Westmoreland.....	"	Sec.-Treas.—W. A. Walker.....	Cairo
M. Abi Massoud.....	"	Delegate—	
		C. H. Maxwell.....	Calvary

L. E. Brawner.....	Whigham
J. E. Wright.....	Cairo
J. A. Lindsay.....	"
T. J. Arline.....	"
J. B. Warnell.....	"
W. A. Walker.....	"

GREENE COUNTY.

President—	
Vice-President—	
Sec.-Treas.—	
Delegate—	
E. G. Adams.....	Greensboro
Goodwin Gheesling.....	"
J. C. Asbury.....	"

GWINNETT COUNTY.

President—C. A. Kelley.....	Lawrenceville
V.-Pres.—N. J. Guthrie.....	Norcross
Sec.-Treas.—D. C. Kelley.....	Lawrenceville
Delegate—D. C. Kelley.....	Lawrenceville
O. D. Hall (moved to Atlanta).....	Buford
D. C. Kelley.....	Lawrenceville
G. S. Kelley.....	"
W. T. Hinton.....	Dacula
B. V. Wilson.....	"
W. J. Hutchins.....	Buford
P. O. Mauldin.....	Norcross
C. A. Kelley.....	Lilburn
Chalmers Hinton.....	Lawrenceville
W. P. Ezzard.....	"

HABERSHAM COUNTY.

President—R. B. Lamb.....	Demorest
V.-Pres.—J. K. Burns.....	Clarksville
Sec.-Treas.—W. V. Chandler.....	Baldwin
R. B. Lamb.....	Demorest
E. H. Lamb.....	"
J. K. Burns.....	Clarksville
J. B. Jackson.....	"
R. Y. Duckett.....	Cornelia
T. H. Brabson.....	"
W. C. McCreary.....	Turnersville
W. V. Chandler.....	Baldwin

HALL COUNTY.

President—	
Vice-President—	
Sec.-Treas.—C. D. Wheelchel.....	Gainesville
Delegate—	
W. R. Simpson.....	Gainesville
H. E. Crow.....	"
E. T. Gibbs.....	"
J. B. Rudolph.....	"
A. D. White.....	"
J. H. Downey.....	"
C. D. Wheelchel.....	"
J. D. Mauldin.....	New Holland
J. C. Orr.....	Flowery Branch
Giles Hathcock.....	Lula
B. W. Lockhart.....	Clermont
H. L. Rudolph.....	Gainesville

HANCOCK COUNTY.

President—W. M. Scott.....	Devereaux
V.-Pres.—G. S. Jernigan.....	Sparta
Sec.-Treas.—Richard Binion.....	"
Delegate—	
W. M. Scott.....	Devereaux
E. H. Hutchings, R. F. D.....	Linton
J. A. Brown.....	Sparta
C. S. Jernigan.....	"
Richard Binion.....	"
R. C. Wiley.....	"

HARALSON COUNTY.

President—J. F. Reid.....	Buchanan
V.-Pres.—J. T. Cobb.....	Felton
Sec.-Treas.—C. W. Downey.....	Tallapoosa
Delegate—C. W. Downey.....	Tallapoosa
W. B. Brock.....	Tallapoosa
T. J. Johns.....	"
M. H. Malone.....	"
C. W. Downey.....	"
W. L. Hogue.....	Draketown
J. F. Reid.....	Buchanan
B. F. Eaves.....	Draketown
E. S. Sanford.....	Buchanan
J. T. Cobb.....	Felton
E. L. Gilmore.....	Tallapoosa
Aaron Godwin, R. F. D. 2.....	Muscadine, Ala.

HART COUNTY.

President—B. C. Teasley.....	Hartwell
V.-Pres.—	
Sec.-Treas.—Geo. S. Clark.....	Hartwell
Delegate—	
W. E. McCurry.....	Hartwell
J. I. Jenkins, R. F. D.....	Bowman
B. C. Teasley.....	Hartwell
Geo. S. Clark.....	"
G. T. Harper, R. F. D.....	Elberton
J. C. Jenkins.....	Hartwell
A. P. Hanie.....	"
H. F. Shields.....	Bowersville
D. J. Barton.....	Hartwell
W. I. Hailey.....	"

HENRY COUNTY.

President—	
Vice-President—	
Sec.-Treas.—	
Delegate—	
R. L. Tye.....	McDonough

IRWIN COUNTY.

President—	
Vice-President—	
Sec.-Treas.—G. W. Willis.....	Ocilla
Delegate—	
A. Harper.....	Wray
W. J. Dismuke.....	Ocilla
G. W. Willis.....	"
J. C. Luke.....	"
J. J. Luke.....	"
S. L. McElroy.....	"

JACKSON COUNTY.

President—R. P. Stinchcomb.....	Pendergrass
V.-Pres.—J. H. Campbell.....	Jefferson
Sec.-Treas.—J. C. Bennett.....	"
Delegate—E. M. McDonald.....	"
J. Hope Campbell.....	Jefferson
L. C. Allen.....	Hoschton
J. C. Bennett.....	Jefferson
C. O. Brock.....	"
D. M. Carter.....	Commerce
Ralph Freeman.....	Hoschton
L. G. Hardman.....	Commerce
W. B. Hardman.....	"
F. M. Hubbard.....	"
W. C. Kennedy.....	Talmo
E. M. McDonald.....	Jefferson
F. M. Nelms.....	Commerce
J. B. Pendergrass.....	Jefferson
L. Sanders.....	Commerce
O. E. Shankle.....	"
L. J. Sharp.....	"
J. S. Smith.....	Jefferson
R. P. Stinchcomb.....	Pendergrass
J. C. Verner.....	Commerce

JASPER COUNTY.

President—	
Vice-President—	
Sec.-Treas.—L. Y. Pittard	Monticello
Delegate—	
F. S. Belcher	Monticello
J. V. Davis	"
C. L. Ridley	Hillsboro
J. H. Bullard	Machen
L. Y. Pittard	Monticello

JEFFERSON COUNTY.

President—S. T. R. Revell	Louisville
V.-Pres.—J. C. Raley	Avera
Sec.-Treas.—J. D. Peacock	Wadley
S. T. R. Revell	Louisville
Pierce Hubert	"
J. R. Lewis	"
G. L. Carpenter	Wrens
J. J. Pilcher	Stellaville
J. O. Kelley	Avera
J. C. Raley	Avera
L. P. Farmer	Spread
W. B. Jordan	Bartow
W. B. Holmes	Wadley
J. D. Peacock	Wadley

JENKINS COUNTY.

President—L. J. Belt	Millen
V.-Pres.—C. Thompson	"
Sec.-Treas.—Q. A. Mulkey	"
Delegate—	
L. J. Belt	Millen
R. Y. Lane	"
J. L. Kirkendol	"
C. Thompson	"
Q. A. Mulkey	"
M. S. Perkins	"

JOHNSON COUNTY.

President—D. C. Harrison	Kite
V.-Pres.—J. G. Brantley	Wrightsville
Sec.-Treas.—R. E. Brinson	"
Del.—P. B. Bedingfield	"
D. C. Harrison	Kite
S. M. Johnson	Wrightsville
T. S. Page	"
J. G. Brantley	"
J. W. Brinson	"
R. E. Brinson	"
P. B. Bedingfield	"
J. A. Meeks	Kite

JONES COUNTY.

President—J. H. Riley	Haddock
V.-Pres.—J. D. Zachory	Bradley
Sec.-Treas.—P. R. Chambliss	Gray
Delegate—P. R. Chambliss	"
J. H. Riley	Haddock
J. D. Zachory	Bradley
P. R. Chambliss	Gray
B. L. White	Round Oak

LAURENS COUNTc.

President—J. Sidney Walker	Dublin
V.-Pres.—W. E. Williams	Rockledge
Sec.-Treas.—J. H. Moore	Dublin
Delegate—	
J. S. Walker	Dublin
W. E. Williams	Rockledge
J. H. Moore	Dublin
R. J. Chappell	Dudley
W. E. Bedingfield	Rentz

E. B. Claxton	Dublin
C. G. Mays	Bruton
W. M. Puckitt	Montrose
J. J. Barton	Dublin
A. T. Coleman	Cadwell
J. L. Weddington	Dublin
W. R. Brigham	"
C. A. Hodges	"
J. H. Duggan	Irwinton
W. F. Massie	Chester
H. L. Montford	Dublin
D. D. Woodward	Dudley
J. E. New	Dexter
J. W. Edmondson	Dublin
H. T. Hodges	"
L. J. Page	"

LINCOLN COUNTY.

W. B. Crawford	Lincolnton
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LOWNDES COUNTY.

President—J. A. Thomas	Valdosta
V.-Pres.—Frank Bird	"
Sec.-Treas.—J. F. Mixson	"
Delegate—D. W. Freeman	"
Alex G. Little	Valdosta
A. Griffin	"
F. H. Thomas	"
J. A. Thomas	"
J. M. Smith	"
Frank Bird	"
D. W. Freeman	"
J. F. Mixson	"
P. C. Quarterman	"
T. E. Pennington	Naylor
E. P. Rose	Valdosta
J. P. Prescott	Lake Park
G. O. Allen	Fargo
E. P. Quillian	Clyattville

MADISON COUNTY.

President—G. W. Westbrook	Ila
V.-Pres.—L. E. Roper	Comer
Sec.-Treas.—Jas. L. Baker	Carlton
Delegate—R. J. Westbrook	Ila
G. W. Westbrook	Ila
R. J. Westbrook	Ila
L. E. Roper	Comer
James L. Baker	Carlton
W. D. Gholston	Danielsville
W. R. McCoy	"
DeWitt W. Payne	"
G. L. Loden	Colbert
J. W. Wallace, R. F. D. 14	Commerce
D. F. Weldon, R. F. D. 2	Danielsville
J. E. Shepherd	Ila
A. J. Griffith	Comer

MERIWETHER COUNTY.

President—E. B. Terrell	Greenville
Vice-President—	
Sec.-Treas.—Frank P. Norman	Greenville
Delegate—	
J. L. Dixon	Woodbury
E. B. Terrell	Greenville
Frank P. Norman	"
John W. Pinkston	"
R. B. Gilbert	"
J. A. Thrash	"
W. H. McClendon	Manchester
J. A. Johnson	"

MITCHELL COUNTY.

President—J. L. Brown.....	Camilla
V.-Pres.—J. R. Clements.....	Pelham
Sec.-Treas.—C. A. Stevenson.....	Camilla
Delegate—	
W. S. Hill.....	Pelham
J. A. Garrett.....	Baconton
J. L. Brown.....	Camilla
F. L. Lewis.....	"
J. M. Spence.....	"
C. A. Stevenson.....	"
J. R. Clements.....	Pelham
B. Williams.....	"
A. S. Hargrove.....	"
H. G. Fusell.....	Camilla
E. T. Newsom.....	"

MONROE COUNTY.

President—W. P. Ponder.....	Forsyth
V.-Pres.—R. C. Goolsby.....	"
Sec.-Treas.—W. J. Smith.....	Juliette
Delegate—R. C. Goolsby.....	Forsyth
J. O. Elrod.....	Forsyth
W. J. Smith.....	Juliette
J. J. C. Wright.....	Culloden
G. L. Alexander.....	Forsyth
R. C. Goolsby.....	"
G. W. Williamson.....	"
R. L. English.....	Goggins Station
W. P. Ponder.....	Forsyth

MONTGOMERY COUNTY.

President—J. C. Collins.....	Uvalda
V.-Pres.—R. H. Mobley.....	"
Sec.-Treas.—J. E. Hunt.....	Mt. Vernon
Delegate—J. W. Palmer.....	Ailey
J. C. Collins.....	Uvalda
R. H. Mobley.....	"
J. E. Hunt.....	Mt. Vernon
J. W. Palmer.....	Ailey
J. H. Dees.....	Alston
M. L. Currie.....	Tarrytown
O. B. Moye.....	Soperton
G. M. Barwick.....	"
W. M. Moses.....	Uvalda
W. H. Warrell.....	Soperton

MUSCOGEE COUNTY.

President—C. A. Peacock.....	Columbus
V.-Pres.—J. H. Johnson.....	"
Sec.-Treas.—A. N. Dykes.....	"
Delegate—J. M. Anderson.....	"
J. M. Anderson.....	Columbus
J. M. Baird.....	"
E. L. Baker.....	"
W. L. Cook.....	"
J. M. Crook.....	"
J. I. Darby.....	"
C. A. Dexter.....	"
W. T. Gautier.....	"
B. B. Jamison.....	"
J. H. Johnson.....	"
T. E. Mitchell.....	"
Alice Moses.....	"
H. S. Monroe.....	"
J. H. McDuffie.....	"
P. A. Tatum.....	"
J. C. Woolridge.....	"
J. R. Youmans.....	"
S. E. Young.....	"
A. N. Dykes.....	"
W. N. Carter.....	"
W. B. Allen.....	"
H. W. Brook.....	"
P. H. Christian.....	"
W. L. DesPortes.....	"

B. B. Hudson.....	Cataula
J. T. Monerief.....	Columbus
F. J. Odum.....	"
C. A. Peacock.....	"
Neil Kitchens.....	Warm Springs
W. M. H. Campbell.....	Columbus
R. F. Johnson.....	"
W. L. Bullard.....	"
M. H. Blanford.....	"
R. L. Williams.....	"
M. F. Pennington.....	"
J. C. Evans.....	"
J. D. Verner.....	"
R. L. Brooks.....	"

McDUFFIE COUNTY.

President—S. Gibson.....	Thomson
V.-Pres.—A. J. Matthews.....	"
Sec.-Treas.—B. F. Riley, Jr.....	"
Delegate—Z. M. Story.....	Winfield
S. Gibson.....	Thomson
A. J. Matthews.....	"
B. F. Riley.....	"
Z. M. Story.....	Winfield
D. A. Rogers.....	Dearing
J. R. Sams.....	"

NEWTON COUNTY.

President—	
Vice-President—	
Sec.-Treas.—Jno. H. Randle.....	Porterdale
Delegate—	
S. W. Everett.....	Almond
S. L. Waites.....	Covington
Jno. H. Randle.....	Porterdale
H. C. Ellis.....	McDonough

OCMULGEE COUNTY.

President—John K. Maloy.....	Milan
V.-Pres.—E. C. Brown.....	Hawkinsville
Sec.-Treas.—F. H. Herrman.....	Eastman
Delegate—J. D. Herrman.....	Eastman
J. Cox Wall.....	Eastman
J. D. Herrman.....	"
F. H. Herrman.....	"
A. L. Wilkins.....	"
J. B. Clark.....	"
J. F. Powell.....	Greston
J. K. Maloy.....	Milan
A. A. Smith.....	Hawkinsville
R. L. Whipple.....	Cochran
J. B. Bradfield.....	McRae
E. C. Brown.....	Hawkinsville
R. R. Stone.....	"
J. J. Stone.....	"
O. F. Collum.....	Chauncey
H. S. Maloy.....	Milan
C. J. Maloy.....	Helena
J. W. Neal.....	Scotland
T. D. Fussell.....	Rhine
J. K. Fussell.....	"
W. P. Coffee.....	"

OCONEE COUNTY.

President—James T. Elder.....	Farmington
V.-Pres.—E. H. Kennimer.....	Bishop
Sec.-Treas.—Wm. M. White.....	Watkinsville
Delegate—Samuel A. Elder.....	High Shoals
James T. Elder.....	Farmington
E. H. Kennimer.....	Bishop
Samuel A. Elder.....	High Shoals
William M. White.....	Watkinsville
Chester O. Middlebrooks.....	Bogart

PAULDING COUNTY.

President—Geo. W. Ragsdale.....	Hiram
V.-Pres.—E. H. Robertson.....	Dallas
Sec.-Treas.—J. I. Matthews.....	"
Delegate—W. O. Hitchcock.....	"
W. O. Hitchcock.....	Dallas
E. H. Robertson.....	"
Geo. W. Ragsdale.....	Hiram
J. I. Matthews.....	Dallas
J. T. Anderson.....	"
W. H. Beall.....	"

PICKENS COUNTY.

President—F. C. Richards.....	Jasper
V.-Pres.—J. S. Darnell.....	Talking Rock
Sec.-Treas.—H. G. Atheton.....	Jasper
Delegate—	
F. C. Richards.....	Jasper
J. S. Darnell.....	Talking Rock
H. G. Atheton.....	Jasper
J. P. Turk.....	Nelson
C. C. Russell.....	Talking Rock
J. H. Hendrix.....	Jasper

PIKE COUNTY.

President—M. M. Head.....	Zebulon
V.-Pres.—	
Sec.-Treas.—J. M. Anderson.....	Barnesville
Delegate—	
M. F. Cochran.....	Barnesville
J. M. Rogers.....	"
John M. Anderson.....	"
C. H. Willis.....	"
J. A. Corry.....	"
C. E. Suggs.....	"
J. R. Graves.....	Zebulon
J. M. F. Barron.....	Milner
J. H. Grubbs.....	Molena
R. A. Mallory.....	Concord
M. M. Head.....	Zebulon
J. C. Beauchamp.....	Williamson

POLK COUNTY.

President—	
Vice-President—	
Secretary-Treasurer—W. A. Chapman (act- ing).....	Cedartown
Delegate—	
W. A. Chapman.....	Cedartown
H. M. Hall.....	"
J. J. Cooper.....	"
C. V. Wood.....	"
S. L. WhiteLly.....	"
J. A. Liddell.....	"
J. E. Pennington.....	Esom Hill
W. W. Tyson.....	Cedartown
T. E. McBryde.....	Rockmart
M. S. Richardson.....	Cedartown

PUTNAM COUNTY.

President—V. H. Taliaferro.....	Eatonton
V.-Pres.—E. F. Griffith.....	"
Sec.-Treas.—S. A. Clark.....	"
Delegate—S. A. Clark.....	"
S. A. Clark.....	Eatonton
E. F. Griffith.....	"
V. H. Taliaferro.....	"
E. Y. Walker.....	Willard

RANDOLPH COUNTY.

President—A. L. Crittenden.....	Shellman
V.-Pres.—W. W. Binion.....	Cuthbert
Sec.-Treas.—G. Y. Moore.....	"
Delegate—F. D. Patterson.....	"
F. S. Rogers.....	Coleman
T. F. Harper.....	"
E. C. McCurdy.....	Shellman
G. Y. Moore.....	Cuthbert
F. M. Martin.....	Shellman

W. W. Crook.....	Cuthbert
T. H. Andrews.....	"
J. B. Tanner.....	Benevolence
W. W. Binion.....	Cuthbert
A. L. Crittenden.....	Shellman
F. D. Patterson.....	Cuthbert
A. F. Weathers.....	Shellman

RICHMOND COUNTY.

President—J. M. Hull.....	Augusta
V.-Pres.—C. I. Bryans.....	"
Sec.-Treas.—H. W. Shaw.....	"
Delegate—	
H. J. Baker.....	Augusta
G. T. Bernard.....	"
C. I. Bryans.....	"
J. F. Burdshaw.....	"
R. I. Bryson.....	"
W. W. Battey.....	"
J. M. Caldwell.....	"
T. D. Coleman.....	"
P. P. Comey.....	"
C. W. Crane.....	"
W. D. Cutter.....	"
A. A. Davidson.....	"
A. J. Deas.....	"
W. H. Doughty, Jr.....	"
H. J. Eve.....	"
W. H. Goodrich.....	"
W. H. Harrison.....	"
J. H. Houan (dead).....	"
W. R. Houston.....	"
G. T. Horne.....	"
Asbury Hull.....	"
J. M. Hull.....	"
S. H. Hankinson.....	"
W. D. Jennings, Jr.....	"
W. C. Kellogg.....	"
T. G. Kershaw.....	"
A. J. Kilpatrick.....	"
S. J. Lewis.....	"
W. C. Lyle.....	"
C. J. Montgomery.....	"
N. M. Moore.....	"
G. W. Mountain.....	"
F. X. Mulherin.....	"
W. A. Mulherin.....	"
E. E. Murphey.....	"
R. L. Rhodes.....	"
T. E. Oertel.....	"
W. T. Price.....	"
J. R. Robertson.....	"
H. W. Shaw.....	"
G. A. Traylor.....	"
J. B. Wright.....	"
M. Silver.....	"
J. H. Butler.....	"
W. G. Hunter.....	"
C. A. Blanchard.....	"
E. O. Scharnitzky.....	"
H. H. Malone.....	"
R. V. Lamar.....	"
M. S. Levy.....	"
J. R. Littleton.....	"
K. W. Milligan.....	"
E. P. Rice.....	"
W. H. Roberts.....	"
L. P. Tessier.....	"
E. A. Wilcox.....	"
J. C. Wright.....	"
T. R. Wright.....	"
H. S. Gehrken.....	"
J. F. Crimmins.....	"
S. T. R. Revell.....	Louisville
S. Lichenstein.....	Augusta
H. N. Page.....	"
W. C. Verdery.....	"

C. C. Timmons.....	Augusta
W. J. Rhodes.....	Louisville
J. P. Timmerman.....	McBean

ROCKDALE COUNTY.

President—	
Vice-President—	
Secretary-Treasurer—	
Delegate—	
J. A. Guinn.....	Conyers

SPAULDING COUNTY.

President—J. R. Anthony.....	Griffin
V.-Pres.—T. I. Hawkins.....	"
Sec.-Treas.—A. H. Frye.....	"
Delegate—W. H. Swain.....	"
J. R. Anthony.....	Griffin
E. R. Anthony.....	"
M. F. Carson.....	"
T. E. Drewry.....	"
J. M. Thomas.....	"
T. I. Hawkins.....	"
C. L. Tucker.....	"
W. H. Swain.....	"
A. H. Frye.....	"
W. H. Austin.....	"
W. L. Beauchamp.....	"
W. S. Howard.....	"

STEPHENS COUNTY.

President—J. H. Crawford.....	Martin
V.-Pres.—J. H. Terrell.....	Tooeba
Sec.-Treas.—C. L. Ayers.....	"
Delegate—Jeff Davis.....	"
Jeff Davis.....	Tooeba
John Terrell.....	"
J. E. D. Isbell.....	"
C. L. Ayers.....	"
Alexander Craig.....	"
C. H. Verner.....	"
J. H. Crawford.....	Martin
E. F. Chaffin.....	"
W. H. Parker.....	Mize

STEWART-WEBSTER.

President—W. C. Sims.....	Richland
V.-Pres.—J. M. Kenyon.....	"
Sec.-Treas.—M. Walton.....	Lumpkin
Delegate—R. L. Grier.....	"
W. C. Sims.....	Richland
J. M. Kenyon.....	"
M. Walton.....	Lumpkin
R. L. Grier.....	"
J. H. Foster.....	Preston
W. F. McCurdy.....	Richland
W. S. Armor.....	Renfroes
W. F. Walker.....	Preston
G. G. Lunsford.....	Weston
J. F. Lunsford.....	Preston
R. H. Allen.....	Omaha
A. S. Boyett.....	Buena Vista
C. E. Pickett.....	Richland

SUMTER COUNTY.

President—	
Vice-President—	
Sec.-Treas.—D. B. Mayes.....	Americus
Delegate—	
B. A. Daniels.....	Americus
G. F. Long.....	"
D. B. Mayes.....	"
B. T. Wise.....	Plains
S. P. Wise.....	"
B. J. Wise.....	"
J. C. Logan.....	"
L. F. Grubbs.....	Americus
H. A. Smith.....	"
J. W. Chambliss.....	"
H. T. Simpson.....	Smithville

B. L. Bridges.....	Ellaville
J. T. Stukes.....	Americus
R. E. Cato.....	"
F. L. Cato.....	"
Taylor Lewis.....	"
E. C. Harris.....	Andersonville
J. R. Jordan.....	Ellaville
Kenneth Wood.....	Leslie
W. S. Prather.....	Americus

TALIAFERRO COUNTY.

President—J. A. Rhodes.....	Crawfordville
V.-Pres.—O. F. Portwood.....	"
Sec.-Treas.—L. R. Brown.....	Sharon
Delegate—A. H. Beazley.....	Crawfordville
J. A. Rhodes.....	Crawfordville
O. F. Portwood.....	"
A. H. Beazley.....	"
L. R. Brown.....	Sharon

TATTNALL-EVANS COUNTIES.

President—B. E. Miller.....	Claxton
V.-Pres.—G. W. Tootle.....	Glennville
Sec.-Treas.—L. A. DeLoach.....	"
Delegate—O. L. Alexander.....	Reidsville
O. L. Alexander.....	Reidsville
J. W. Daniel.....	Claxton
L. A. DeLoach.....	Glennville
S. T. Ellis.....	Hagan
G. W. Elarbee.....	Daisy
T. M. Edwards.....	Claxton
J. M. Hughes.....	Glennville
J. C. Harris.....	Collins
R. D. Jones.....	Elzie
J. J. Kennedy.....	Collins
J. L. Kennedy.....	Manassas
B. E. Miller.....	Claxton
F. W. McCall.....	Reidsville
V. C. Powers.....	"
L. V. Strickland.....	Cobbtown
G. W. Tootle.....	Glennville
C. B. Walling.....	Collins
B. E. Daniel.....	Claxton
A. C. Colson.....	Collins
S. F. Smith.....	Glennville
T. G. Moore.....	Cobbtown
H. L. Tippins.....	Glennville

TAYLOR AND MACON COUNTIES.

President—C. H. Richardson.....	Montezuma
V.-Pres.—J. E. Mangham.....	Reynolds
Sec.-Treas.—R. C. Montgomery.....	Butler
Delegate—J. E. Mangham.....	Reynolds
W. W. Edwards.....	Butler
C. F. Fickling.....	"
R. C. Montgomery.....	"
J. E. Mangham.....	"
S. H. Bryan.....	"
J. M. Cook.....	Charing
C. H. Richardson.....	Montezuma
Charles A. Grier.....	Oglethorpe
H. C. Derrick.....	"
F. G. Turk.....	Reynolds
F. M. Mupplino.....	Montezuma

TERRELL COUNTY.

President—O. T. Kenyon.....	Dawson
Vice-President—	
Sec.-Treas.—C. G. Hooten.....	Bronwood
Delegate—	
C. G. Hooten.....	Bronwood
J. W. Patterson.....	Dawson
J. G. Dean.....	"
Lucius Lamar.....	"
J. H. Lewis.....	"
R. E. Bowman.....	Bronwood
J. T. Arnold.....	Parrott
Ein Cullom.....	Dawson
E. P. McLennan.....	Parrott

O. T. Kenyon.....	Dawson
H. L. Akridge.....	Sasser
Guy Chappell.....	Dawson
W. H. Gardner.....	"

THOMAS COUNTY.

President—A. D. Little.....	Thomasville
V. Pres.—Harry Ainsworth.....	"
Sec. Treas.—S. L. Cheshire.....	"
Delegate—J. B. Palmer.....	"
S. L. Cheshire.....	Thomasville
C. H. Ferguson.....	"
Harry Ainsworth.....	"
W. W. Jarrell.....	"
A. D. Little.....	"
J. B. Palmer.....	"
Thomas Holton.....	"
E. L. Lawson.....	"
W. J. Jennings.....	"
A. P. Taylor (honorary).....	"
J. N. Isler.....	Meigs
J. L. Summerlin.....	"
P. L. Hollingsworth.....	"
John M. Begg.....	Pavo
J. B. Threatt.....	Pavo
S. E. Sanchez.....	Barwick
H. A. Vann.....	Boston
L. E. Martin.....	"
W. B. Watkins.....	Metcalf

TIFT COUNTY.

President—Irwin Willis.....	Omega
V. Pres.—A. G. Fort.....	Tifton
Sec. Treas.—C. B. Welch.....	"
Delegate—N. Peterson.....	"
Irwin Willis.....	Omega
A. G. Fort.....	Tifton
C. B. Welch.....	"
N. Peterson.....	"
W. H. Hendricks.....	"
L. A. Baker.....	"
M. L. Webb.....	Omega
G. W. Julian.....	Tifton
J. M. Price.....	"
W. T. Smith.....	"
Carl S. Pitman.....	Ty Ty

TOOMBS COUNTY.

President—W. A. Herrington.....	Vidalia
V. Pres.—I. E. Aaron.....	Lyons
Sec. Treas.—W. W. Odom.....	"
Delegate—W. F. Peacock.....	Vidalia
W. A. Herrington.....	Vidalia
T. C. Thompson.....	Vidalia
J. M. Meadows.....	"
W. F. Peacock.....	"
I. E. Aaron.....	Lyons
W. W. Odom.....	"
B. H. Clifton.....	"
V. L. Darby.....	Vidalia
H. D. Youmans, Rt. A.....	Lyons

TRI COUNTY.

President—	
Vice-President—J. C. Standifer.....	
Sec. Treas.—J. G. Standifer.....	Blakely
Delegate—	
J. G. Standifer.....	Blakely
B. C. Bird.....	Colquitt
W. C. Hays.....	"
J. P. Cook.....	"
B. T. Johnson.....	Bluffton
P. H. Fitzgerald.....	Blakely
W. O. Shepard.....	"
H. L. Carroll.....	New York, 341-351 W. 50th St.
B. L. Bridges.....	Morgan
J. H. Crozier.....	Cedar Springs
Clinton Reed.....	Babcock

C. K. Sharp.....	Arlington
J. S. Beard.....	Edison
C. R. Barksdale.....	Blakely
C. J. Jenkins.....	Edison
C. O. Tye.....	"
P. H. Keaton.....	Damascus
C. W. Twitty.....	Elmodel
B. K. Simmons.....	Blakely
J. C. Stewart.....	Leary
E. C. Smith.....	Jakin
W. J. Tatum.....	Fort Gaines
W. E. Saunders.....	Arlington
W. B. Standifer (honorary).....	Blakely
C. P. Holmes.....	Fort Gaines
N. L. Spengler.....	Donalsonville

TROUP COUNTY.

President—Henry R. Slack.....	LaGrange
V. Pres.—W. E. Morgan.....	"
Sec. Treas.—John Banks.....	"
Delegate—Emory Park.....	"
Henry R. Slack.....	LaGrange
W. E. Morgan.....	"
John Banks.....	"
Emory Park.....	"
H. W. Terrell.....	"
W. H. Clark.....	"
H. H. Hammett.....	"
W. H. Hadaway.....	"
D. E. Morgan.....	"
Joe Lane.....	"
W. W. Rutland.....	"
Wm. R. McCall.....	"
Rance O'Neil.....	West Point
Jno. M. Poer.....	Journal
T. G. Gauntt.....	West Point
C. O. Williams.....	"
J. H. Horsley.....	"
Hugh McCulloh.....	"
R. A. Verdier.....	LaGrange
R. O. Lee.....	"
R. A. Justice.....	"
F. M. Ridley, Jr.....	"
J. H. Heflin.....	Hogansville

TURNER COUNTY.

President—W. L. Story.....	Ashburn
Vice-President—	
Sec. Treas.—J. H. Baxter.....	Ashburn
Delegate—	
J. H. Baxter.....	Ashburn
W. L. Story.....	Ashburn
G. R. Luke.....	"
W. J. Turner.....	"
H. M. Bellflower.....	Sycamore
H. W. Harris.....	"
W. A. Harrison, R. F. D.....	"
W. W. Pilcher (dead).....	"
J. W. Dickson.....	Rebecca
F. W. Rogers.....	Dakota

UPSON COUNTY.

President—A. H. Black.....	Thomaston
V. Pres.—J. M. McKenzie.....	"
Sec. Treas.—H. A. Barron.....	"
Delegate—C. A. Harris.....	The Rock
A. H. Black.....	Thomaston
J. M. McKenzie.....	"
H. A. Barron.....	"
E. W. Carter.....	"
K. S. Williams.....	"
C. A. Harris.....	The Rock

WALKER COUNTY.

President—J. M. Underwood.....	LaFayette
V. Pres.—R. M. Coulter.....	"
Sec. Treas.—J. H. Hammond.....	"
Delegate—J. A. Shields.....	Villanow

J. M. Underwood.....	LaFayette
R. M. Coulter.....	"
J. H. Hammond.....	"
S. W. Fariss.....	"
W. D. Rogers.....	Pittsburg
H. M. Barker.....	Flintstone
J. A. Shields.....	Villanow
M. W. Murphy.....	Ringgold
E. M. Jennings.....	Menlo
G. E. Martin.....	"
Willis J. Bryant.....	Sammerville
D. Spencer Middleton.....	Rising Fawn
R. E. Talley, R. F. D.....	LaFayette
J. P. McWilliams.....	"
D. G. Elder.....	Chicamauga
J. P. Hunter.....	Kensington
M. N. Wood.....	Menlo
S. F. Hutcherson.....	Gore
M. M. Crowder, R. E. D.....	Kensington
Frank A. Story.....	LaFayette
M. T. Kemp.....	Shaw

WARE COUNTY.

President—A. Fleming.....	Waycross
V. Pres.—H. J. Carswell.....	"
Sec. Treas.—D. M. Bradley.....	"
Delegate—B. H. Minchew.....	"
J. L. Walker.....	Waycross
A. Fleming.....	"
H. J. Carswell.....	"
W. M. Folks.....	"
G. N. MacDonell.....	"
R. P. Izlar.....	"
P. P. Lane.....	"
B. H. Minchew.....	"
F. C. Nesbitt.....	"
A. B. Mason.....	"
J. J. Beaton.....	"
C. A. Witmer.....	"
E. B. Mitchell.....	"
D. M. Bradley.....	"
W. P. Williams.....	Blackshear
G. T. Hendry.....	"
W. R. Moore.....	"
D. W. F. Malloy.....	Alma
J. H. O'Quinn.....	Patterson
A. F. Christopher.....	Millwood
W. C. Hafford.....	Waycross

WARREN COUNTY.

President—G. R. Manier.....	Warrenton
V. Pres.—F. B. Ricketson.....	"
Sec. Treas.—A. W. Davis.....	"
Delegate—R. Y. Pryce.....	Norwood
G. R. Manier.....	Warrenton
F. B. Ricketson.....	"
A. W. Davis.....	"
W. W. Pilcher.....	"
R. Y. Pryce.....	Norwood
E. K. Lazenby.....	Camak
H. L. Earl.....	Jewell

WASHINGTON COUNTY.

President—L. A. Graybill.....	Oconee
V. Pres.—J. H. Evans.....	Sandersville
Sec. Treas.—O. L. Rogers.....	Sandersville
Delegate—	
Wm. Rawlings.....	Sandersville
F. B. Rawlings.....	"
T. Byron King.....	"
N. J. Newsom.....	"
J. R. Burdette.....	Tennille
D. E. McMaster.....	"
B. O. Joiner.....	"
E. S. Peacock.....	Harrison

L. A. Graybill.....	Oconee
C. D. Redding.....	Warthen
G. W. Malone.....	Sandersville
S. B. Malone.....	"
O. L. Rogers.....	"
E. A. Harris.....	"
R. L. Taylor.....	Davisboro
P. C. Nunn.....	"
J. B. Dillard.....	"
T. E. Vickers, R. F. D.....	Wrightsville
N. H. Lozier.....	Warthen
B. L. Helton.....	Deepstep
J. H. Evans.....	Sandersville
L. O. McBride.....	Oconee
W. C. Troutman.....	Tennille

WAYNE COUNTY.

President—J. G. Tuten.....	Jesup
V. Pres.—D. H. Ogden.....	Odum
Sec. Treas.—E. C. Crummev.....	Jesup
Delegate—A. J. Gordon.....	"
J. G. Tuten.....	Jesup
J. T. Colvin.....	"
A. J. Gordon.....	"
E. C. Crummev.....	"
I. K. Ogden.....	Odum
D. H. Ugden.....	"
T. G. Riten.....	"
J. L. Tyre.....	Screven
D. L. Moore.....	Lulaton
J. A. Campbell.....	Hickox
J. A. Lee.....	Ritch

WHITFIELD COUNTY.

President—	
Vice-President—	
Sec. Treas.—	
Delegate—	
J. C. Rollins.....	Dalton

WILCOX COUNTY.

President—B. R. Bussell.....	Rochelle
V. Pres.—F. M. Bruce.....	Pineview
Sec. Treas.—J. N. Dorminy.....	Seville
Delegate—J. T. Gammage.....	Pineview
B. R. Bussell.....	Rochelle
F. M. Bruce.....	Pineview
J. N. Britt.....	Rochelle
J. N. Dorminy.....	Seville
H. A. Dorsey.....	Pitts
J. T. Gammage.....	Pineview
C. D. McRae.....	Rochelle
C. L. Kennon.....	"

WILKES COUNTY.

President—O. S. Wood.....	Washington
V. Pres.—A. W. Simpson.....	"
Sec. Treas.—J. B. Lewis.....	"
Delegate—H. M. Sale.....	"
R. A. Simpson.....	Washington
A. W. Simpson.....	"
O. S. Wood.....	Washington
J. B. Lewis.....	"

WORTH COUNTY.

President—W. W. Sessions.....	Sumner
V. Pres.—J. L. Tracy.....	Sylvester
Sec. Treas.—W. C. Tipton.....	"
Delegate—J. L. Tracy.....	"
J. L. Tracy.....	Sylvester
V. P. Stevens.....	Poulan
S. W. Johns.....	Doles
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VOL. VII.

AUGUSTA, GA., DECEMBER, 1917

No. 8

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EXTRA UTERINE PLACENTAL GROWTH.*

By A. J. Mooney, M.D., Statesboro, Ga.

Drawing conclusions from experiments on the lower animals, and applying such conclusions to the human, all pregnancies are essentially extra-uterine in the beginning.

It is needless to relate the experiments showing that the spermatozoa travel up the fallopian tubes, and have been found on the surface of ovaries in the abdominal cavity. Fecundation of the ovum takes place in the fallopian tube, and the fertilized ovum travels down the tube to find lodgment in the uterus in a normal pregnancy.

If there is a mechanical obstruction in the tube, or if the tube is diseased, causing a loss of ciliated epithelium, or other alterations, then the fertilized ovum fails to reach the uterus and extra uterine pregnancy results.

All that have done much surgery have noted a pregnancy in cases where the ovary on one side and the tube on the other have been removed. Kelly notes a case of extra uterine pregnancy in such condition.

Since such cases are sometimes seen, we are safe in assuming that sometimes ova are fertilized in the abdominal cavity, but fail to grow because there is an element lacking. That element is the power to form decidua and develop chorionic villi. Such necessary faculty is found, however, in the tube as well as in the uterus.

The growth of placental tissue, I formerly supposed was limited to the tube and uterus, but the case I am about to report seems to prove that placental tissue can grow outside either the uterine cavity or tube, unless in the case to be reported its slight attachment to the tube made such growth possible.

History:

Mrs. B. F., married, white, age 25, gave the following history: Was healthy up to her 18th year, then had an attack of acute appendicitis. Was never strong; had usual diseases of childhood, also two attacks of

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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left frontal sinusitis. One child living. No miscarriages; menstrual periods regular until March, 1916, when she missed one period. Then she had little flowing attacks every few days with some abdominal pain. In April, 1916, while I was in Columbus, Ga., she had a very severe flooding spell, accompanied by abdominal pain. Dr. B. A. Deal was called and he informed me that he curetted her and removed about three quarts of a material that looked like grapes about the size of a marble, small cyst-like affairs of a whitish-yellow color. The next morning she was brought to the hospital; her temperature was 103°F. She was again curetted and a small amount of apparently placental tissue removed. Her recovery was normal, but she could not gain strength. She came to consult me in September, 1916, for a lump that had suddenly appeared in her right side. She stated that she felt a sickening pain in her right side and then discovered the lump. It was a round mass apparently the size of a cocoanut. I manipulated the mass, and during the process of manipulation, it was rotated, and her pain was somewhat relieved, although she had not suffered much with it. I made a diagnosis of ovarian cyst, with a long, twisted pedicle, and advised operation. To this she could not make up her mind.

October 15, 1916, I was called out to see her, and found her suffering intensely from nausea and backache, the backache being on the left of the sacrum. She then agreed to come to the hospital, where I kept her two days before operating. During these two days her temperature fluctuated from 97°F. to 99.2-5°F., and her pulse from 92 to 134. I operated October 22, 1916. Median incision disclosed a large mass in left side of pelvis with an attachment to the fimbriated extremity of the left tube about an inch in area.

On the surface of the mass were large blood vessels, very similar to the large vessels seen on the smooth surface of a placenta. The mass was firmly attached to the left pelvic wall.

Loosening the left tube at the uterine end from the edge of the mass, I clamped the left tube; then, with a sweeping movement with the edge of my hand I detached the mass from the left pelvic wall and delivered it out of the abdomen. It had the appearance of a placenta of an average seven and

a half months' duration. The operation was extremely bloody. She also had a large multilocular cyst of the right ovary, which I removed. Also her chronic appendix.

A specimen of the mass was sent to Dr. Allen H. Bunce, of Atlanta, for microscopical examination, which follows:

Tissue.

"An irregular mass of tissue 5x4x3 1-2 C.M. Grossly the tissue is irregular in shape, very friable and dark in color. Its irregular appearance suggests many adhesions to surrounding tissue. Upon microscopical examination, the greater part of the mass is composed of connective tissue and organized blood clots. The nuclei of the connective tissue cells, not taking a nuclear staining, suggests the degenerative process. Scattered through this tissue are areas of chorionic epithelium. This chorionic epithelium appears to be embedded in the surrounding tissue. Both the nuclei and cytoplasm of these cells stain faintly. Mitosis of the cell nuclei can not be demonstrated in any of the cells. This, together with the faint staining, leads me to believe that this chorionic epithelium is not forming a new growth.

Diagnosis.

"Placental tissue, as evidenced by the presence of chorionic epithelium embedded in connective and organized hemorrhagic tissue."

My diagnosis was placental tissue as the result of an incomplete tubal abortion, the placental tissue through its attachment to the fimbriated extremity of the left fallopian tube, receiving sufficient blood supply to continue its growth.

Kelly, in his *Operative Gynecology*, speaks of living fetuses in the free abdominal cavity, following a ruptured extrauterine pregnancy, but states that with the death of the foetus, that the tissues are absorbed, and that the foetus undergoes various changes. So far, I have been unable to find an accurate account of placental tissue continuing to grow after the extrauterine pregnancy is terminated, either by rupture or tubal abortion. The outcome of the case is of especial interest, especially as regards her symptomatic pains, temperature and pulse.

Her post-operative convalescence was about normal, probably having more nausea than the average. Her post-operative tem-

perature fluctuated from 100.1-5 to 98, up until October the 29th. Her pulse fluctuated from 160, immediately after the operation, 90. Probably the morning and afternoon temperature for the following week would be of interest. At 9 a. m. Tuesday, October 31st, temperature 98.3-5, pulse 80, and 5 o'clock p. m., temperature 100.2-5, pulse 104. November 1st, 9:30, temperature 97.3-5, pulse 80, 5 o'clock p. m., temperature 100, pulse 98. November 2d, 9 o'clock a. m., temperature 98, pulse 100, 5 p. m., temperature 100.3-5, pulse 112. 9 o'clock temperature November 3d, 98.2-5, pulse 120. 5 p. m. temperature 99.1-5, pulse 110. November 4th, 9 o'clock, temperature 98.1-5, pulse 112; 5 o'clock p. m., temperature 100, pulse 115. November 5th, 9 o'clock, temperature 98.2-5, pulse 122. 5 o'clock, temperature, 100.2-5, pulse 124. 9 o'clock, temperature November 6th, 98, pulse 120; afternoon, 5 o'clock, temperature 100.3-5. November 7th, 9 o'clock, temperature 97.3-5, pulse 126; 5 o'clock temperature 100, pulse 128. November 8th, 9 o'clock, temperature 98, pulse 128.

This is about the way the pulse and temperature ran during the balance of her illness.

On October 30th she began complaining of headache, the pain being referred to the left frontal sinus. The next day her left maxillary sinus was also tender, and she had pains in two or three of her upper teeth on the left side. The headache gradually getting worse, became almost intractable, requiring large doses of morphine to relieve the same.

Blood count by Dr. Whiteside November 4th showed a slight leucocytosis. Her blood pressure 120 M M B G systolic; urine negative. Her nausea continued during her entire illness.

Suspecting either an abscess of the left cerebral hemisphere, or an empyema of the frontal sinus, I sent her to a specialist in Savannah for diagnosis. They were unable to make a diagnosis. She returned to my care and died November 19, 1916, thirty days after the operation. Before her death, she developed a paralysis of the left side. Also inequality of the pupils, and her pulse varied from 95 to 150. No autopsy was permitted. Therefore, our conclusions will have to be guess work based on the symptoms. We have to consider temporosphenoidal abscess. We also have to consider

the possibility of a new growth, the result of a metastasis. Presuming that the extra-uterine pregnancy had taken on the formation of a hydatidiform mole, and knowing that hydatidiform moles sometimes undergo malignant changes, it is possible that the growing placenta was undergoing chorio epitheliomatous changes, and this had metastasized to the brain. Embolism of the brain has to be taken into consideration, but the clinical picture as regards temperature and pulse would be against it.

An autopsy in this case would have been a great service.

Bank of Statesboro Building,
Statesboro, Ga.

DISCUSSION OF DR. MOONEY'S PAPER AND DR. LOGAN'S PAPER.

Dr. A. J. Mooney (closing): I have nothing to say except that I regret I was not permitted to make an autopsy in this case, and I also want to say that it seems we should make more autopsies than we do. I do not think the public is educated to the importance of autopsies, and I believe it is our duty to get busy with the public and get them away from the old idea of the sentimentality connected with cutting up a dead man's body. There is a vast fund of information that could be given to all of us if we could have more autopsies.

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A CASE OF SUPERFOETATION.*

By J. C. Logan, M.D., Plains, Ga.

Superfoetation, or the impregnation of a female that is already pregnant, is an idea that is vigorously denied by some and is a condition that we all realize is no common occurrence.

I realize the magnitude of the subject and the unpopularity of the idea, still if you will bear with me for a few moments I wish to report a case that came under my observation that supports the idea.

On January 12, 1917, I was called to attend a negro girl of 16 in labor. She was a primipara. I found upon inquiry that she had been in labor for 48 hours. She had been given the usual teas of various kinds usually given by the negro mid-wife and had been given an abundance of abuse from her pious old Mammy, who was much humiliated over the plight of her daughter. Upon examination I found a transverse presentation with left hand and arm presenting and left shoulder jammed well down in the pelvis. She had been in this shape for some 12 or 14 hours, still she was being drugged, her knees pressed, her arms pulled and everything known to the negro granny to be good was done, still the horrid thing remained. Upon examination I at once set about to do a combined external and internal version, which you all know was no easy task after this condition had existed for such a period of time. After something like forty minutes of hard work (for the Amniotic fluid had all escaped), I succeeded in bringing down one foot and in a reasonably short time I delivered her of a six and three-quarter pound baby girl, which was dead. This was a full-term foetus, normal in every respect, and as there was a state of complete uterine inertia, also considerable hemorrhage I at once used Crede's method in delivering the placenta, which was complete and of normal size. After the delivery of the placenta I examined again and found that the uterus had not been cleared and after a few moments' work I brought out another foetus; this, a boy and placenta, which was considerably smaller than the first, sec-

ond foetus being about ten and one-half inches long and weighing about seventeen ounces. The head was somewhat out of proportion to the body and the face presented a wrinkled or senile look. It had every appearance of being a normal five and one-half months' foetus. There was nothing abnormal in the appearance of the placenta.

There was no mummification or maceration or putrefactive changes in the small foetus, such as might be found in twin pregnancy where one foetus dies and is retained in the uterus until its more fortunate mate reached full term. It would be an utter impossibility for a dead foetus to be retained in the uterus for several months, soaked in amniotic fluid without undergoing some of these different forms of degeneration. The head would be flabby and the bones of the skull would be loose as if they were in a sack and the skin would have a parchment-like look or some other changes of this kind. This was not true in my case, but the small foetus was as firm and as normal in appearance for a five and one-half months as the other for full term.

As to the possibility or probability of this being a case of bified or bilobular uterus and explaining it in this way I am prepared positively to contradict, for I passed my hand into the uterus and examined it carefully, and there was nothing at all abnormal about the construction of it. The only abnormal or unusual thing being its cordial or hospitable way of receiving an extra guest when the space is already taken.

As to the past history of this girl she gives a history of having been perfectly regular in her menses and never having any trouble whatsoever as to the various menstrual disorders. She claims that she had never failed to menstruate since reaching proper age until August, 1916, when she missed and hadn't menstruated since. Upon inquiry of the history of the period of gestation it reveals the fact that for two or three months prior to August she had suffered from nausea, nothing else unusual being revealed during this period, which shows conclusively that she menstruated several times after she was really pregnant and offers a strong argument in favor of superfoetation.

There are numerous cases of superfoetation on record, that is to say cases where there was fertilization of two ova of the

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same ovulation, but of different coitus. One of these cases being a case in which a woman had intercourse with a white man and a negro on the same night. From this coitus conceived gave birth to twins, one a negro, the other a bright mulatto. This was accepted as conclusive proof that she conceived at both coitus and the father of one was a negro and the other a white man.

Then, again, a case in Baltimore at Johns Hopkins, I believe it was, in which a woman gave birth to twins, one an apparently normal foetus, while the other showed syphilitic lesions. Upon being interrogated this woman confessed that she had intercourse with her husband and another man on the same night, and upon investigation it was found that the husband had syphilis at the time. Such cases are generally accepted as sufficient proof that, though twins, they may have a different father.

Now, super-foetation or the fertilization of two ova of different ovulation, that is to say, the impregnation of a female already pregnant, is admitted by a number of obstetrical authorities as a theoretical possibility, though I believe the general contention is that it has never been shown conclusively that it has actually occurred, and, in fact, the possibility of such a thing has been vigorously opposed by many writers. Some writers state that a careful analysis of the so-called cases of super-foetation shows conclusively that the phenomena in most cases can be explained by twin pregnancies with a slow development of one foetus, but going further they admit that there are examples advanced in support of this idea that can not be explained by this hypothesis.

One argument in support of this idea is based on cases in which two living children have been born at different and widely separated periods, ranging from one month to five and one-half. Now, supposing that two children be born at intervals of four months and both capable of being reared, we must acknowledge the probability of super-foetation in such a case or admit that a five months' foetus is capable of being reared, which is in the highest degree improbable.

Another objection that is used against the possibility of this condition is the cessation of ovulation during pregnancy. This, no doubt, is the rule, still there are a sufficient number of well authenticated cases of menstruation during pregnancy to prove that

ovulation is not always in absolute abeyance. One writer states that although the vast majority of cases of so-called super-foetation can be explained by twin pregnancies that there is a small number of cases which can not be explained upon this hypothesis, and this makes the existence of super-foetation seem probable.

Now, at the time I attended this girl I realized that it was an unusual case, still at the time it didn't occur to me that there had been so few cases similar to it reported, and I failed to secure the specimen. To my mind, this is without a doubt a case of super-foetation and had I been fortunate enough to have secured these specimens and preserved them and exhibited them here to you today I believe that every one present would be convinced that super-foetation is not only a theoretical possibility, but that this case alone proves not only the possibility, but shows conclusively that the thing did actually occur.

HYPERPRESSURE.*

Stewart R. Roberts, S.M., M.D., Professor of
Medicine in Emory University, Atlanta.

Hyperpressure is a persistent increase in the systolic or diastolic pressure, or both, above the normal for the age of the individual. Pressures are interpreted in terms of the age of the individual, with due consideration to the conditions at the time of reading. The systolic pressure is the maximal pressure in the artery, occurs during ventricular systole, and is due to the apex of the pulse wave as it passes the section of the artery where the cuff is applied. The diastolic pressure is the minimal pressure in the artery, occurs during ventricular diastole, and is due to the ebb of the pulse wave as it passes the section of the artery where the cuff is applied. It is the permanent pressure in the arteries between ventricular beats. The pulse pressure is the difference between the systolic and diastolic pressures, or the measurement of the rise of the diastolic to the systolic pressure during the ventricular systole, and is due to the passing of the pulse wave.

Pressure is greatest in the left ventricle

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and aorta and decreases gradually to the periphery. It is from 5 to 10 mm. less in females than in males. Exercise, excitement, stooping, eating cause usually a rise from 5 to 40 mm. in the systolic pressure, and small variations in the diastolic. Extreme elevations to 14,000 feet cause drops of 5 to 10 mm. Normal pressures vary with age. From three to fifteen years the systolic averages from 90 to 110, the diastolic from 65 to 80, and the pulse from 25 to 40. Counting at twenty years a wide average of 120 systolic and 80 diastolic, a rise of 1-2 mm. for each year of age to 60 is well in normal limits for systolic pressure, though the diastolic lags behind the proportional advance of the systolic. A grandfather at 65 may have a normal pressure of 150; his son at 40 a pressure of 125, and his grandson at 15 a pressure of 100 mm. Systolic pressures around 150 and diastolic around 100 are at least borderline pressures, and increments above them may be considered distinctly pathological. Readings by palpation are from 5 to 20 too low, and are incorrect. Readings by the stethoscope are clinically correct. The systolic is read at the first faint click of sound in the artery, and the diastolic at the moment the loud, pure arterial sound drops to the muffled tone of the fourth phase or ceases abruptly.

There is a pathological difference and a clinical distinction between arteriosclerosis and hyperpressure. The first is an increase in the thickness, resistance, and palpability of the vessel, an anatomical change in the vessel wall. The second is an increase of the fluid pressure within the vessel—a functional perversion and a pathological physiology. Arteriosclerosis may exist without hyperpressure, hyperpressure without sclerosis. Here certain factors increase the tone of the arterial wall, constrict the bore of the vessel, and raise the pressure. Permit this to continue and a compensatory sclerosis develops. Toxic sclerosis exists with or without hyperpressure, and even with hypopressure. Renal sclerosis, the old interstitial nephritis, is a combination of contracted kidney, hyperpressure and hypertrophied heart. Arteriosclerosis without hyperpressure does not cause cardiac hypertrophy, whereas hyperpressure alone without sclerosis does cause it. Decrescent sclerosis, the senile type, compatible with the strength of four-score years, is a tortuous and looped sclerosis with normal pressure and normal heart in size

and sound. Hyperpressure, rather than the arteriosclerosis is the danger and is mortal in proportion to its height. I had rather be 60 with tortuous arteries and a blood pressure of 130-90-40, than 50 with no distinct abnormal feel to my arteries and yet with a blood pressure of 200-130-70.

The diastolic pressure is the between beat pressure and is the starting point in hyperpressure and the key to its interpretation. For the heart to expel two ounces of blood at each systole into atmospheric pressure is negligible work, but to expel this amount against diastolic pressure forms the real work of the ventricle. The aortic valves open when the ventricular pressure exceeds the aortic, and close when the aortic pressure exceeds the ventricular. The diastolic is to the systolic normally as 2 to 3. The higher the diastolic pressure, the higher must be the ventricular pressure at each systole, and the greater the cardiac work; for here the ventricular pressure must not only be raised abnormally above the high diastolic, but it must be raised still higher to send the pulse volume with sufficient force to move the blood mass under the raised diastolic pressure. The latter measures the peripheral resistance, which may be raised either by a stiffening and narrowing of the vessels, or more often by an increased tonus and contraction through stimulation of the vaso-constrictor center. A patient of 52, weight 220, suffering with interstitial nephritis, had a pressure of 250-150-100, a pulse of hardness and arteries apparently only slightly thickened. Another patient of 58, weight 160, suffering with a hyperpiesia, had a pressure of 180-90-90, pulse not nearly so hard, but arteries very sclerotic. The great diastolic in the first case was no doubt due to the increased tonus of the arterial wall, while such constrictor stimulation was wanting in the latter case. A persistent diastolic of 110 mm. causes cardiac hypertrophy. As the wall loses its elasticity, the vessel loses tonus, and the diastolic remains at equilibrium or falls, while the systolic must continue to mount. Rising diastolic pressures often mean failing heart and increased venous stasis.

The pulse pressure is the moving pressure of the blood and measures the load the heart carries in systole. A reading under 30 is low and over 50 is high. It is about 50 per cent of the diastolic and 33 per cent of the systolic pressures. As the pulse pressure

risks, "the blood pressure moves more suddenly and largely, bangs more, and thus racks the machinery." (Allbutt.) Some factor other than sclerosis and tortuosity must exist to raise pulse pressure. It is possible that decreased peripheral resistance will cause reflexly increased force to the systole and a rise in pulse pressure, because the heart must keep the diastolic pressure high enough to keep the blood moving. On the other hand, sclerotic vessels, loss of elasticity and the power to keep the blood moving, forces the heart to take up the work formerly done by the vessels. With elastic vessels some of the kinetic energy of the heart is stored in the vascular wall only to be immediately expended in kinetic energy in forcing the blood forward. Increased pulse pressure puts more work on the left ventricle, and hypertrophy, dilatation, and widening of the aortic arch follow. With fibrous changes in the myocardium hypertrophy is less, dilatation earlier, and the symptoms cardiac in character. Here premature contractions are common. Warfield thinks that all rises in pulse pressure over 70 result in: (1) increase in the size of the left ventricle and the throwing out of more blood at each systole; (2) dilatation of the aortic arch; (3) tubular breathing over the manubrium due to pressure of the aorta on the trachea, and (4) increase in the size of the peripheral arteries, sclerotic changes, and increase in the size of the pulse wave. Large pulse pressures appear in aortic regurgitation of sclerotic origin, hyperpiesia and its sclerosis, acute infectious diseases, interstitial nephritis, and frequently in cachectic states.

The systolic pressure is high when the pulse pressure is raised, and high systolic pressure occurs in conditions that raise pulse volume. The systolic pressure is usually high when the peripheral resistance is low, as in aortic regurgitation; and when the peripheral resistance is high, as in interstitial nephritis. High systolic pressures are more variable than diastolic pressures. A high systolic pressure is not as serious as a high diastolic pressure. With a pulse of 72 the high systolic occupies but 21 seconds of the minute, and the high diastolic 39 seconds. Systolic pressures of 160 and more are distinctly pathological and indicate an overworked heart, a gradual hypertrophy and dilatation of the left ventricle. The

highest systolic pressures exist in interstitial nephritis. Pressures to 285 are frequent, and in a case of nremia in a negro girl of 20 it was over 300. High pressure may exist with but slight evidence of sclerotic changes in the peripheral arteries. Falling systolic pressure is evidence of cardiac failure. In a man of 41, whose physician found his pressure three months before to be 185, I found 124, diastolic of only 112. The patient was suffering with severe myocardial failure. The heart was notable to keep up its former hyperpressure. On the other hand, with failing heart, increase of blood in the veins and of venous pressure, and carbon dioxide stimulation of the vaso-constrictor center, the systolic pressure may rise to death, the high pressure stasis of Sahli. In two cases I have seen the pressure rise during and for two hours after bleeding. This was probably due to the great constriction from uremic toxins in the blood.

Hyperpressure is compatible with feelings of health and vigor. A woman of 48, weight 160, was walking and working and feeling well with pressure of 290-140-150. The condition is often discovered by accident, as in an insurance examination. The most diverse symptoms may arise, involving the circulatory, respiratory, urinary, digestive, and nervous systems. It is often difficult to say just what influence hyperpressure has and what influence the kidney or arteriosclerosis may have on the heart. Certainly, however, the arrhythmic, gamely laboring organ may pass through hypertrophy and dilatation to a defeated heart. Anginal attacks occur, and fleeting precordial pains. Persistent hyperpressure causes a compensatory sclerosis, but a decreescent sclerosis develops without hyperpressure. Dyspnea, orthopnea, acute edema, and even hyperemic states with failing heart occur. Occasionally when the heart by virtue of the overwork has hypertrophied to the large, laboring organ of later stages, patients complain of a sense of fullness in the chest, a tightness, and a feeling that they breathe one-third the way down. Frequent deep inspirations and sighings are common in this type. Throbbing and dull aching around the apex occurs when on the left side. The aortic second is accentuated even to splitting. The door slams hard and quickly. A relative mitral regurgitation comes with greater dilatation—the mitralizing of the heart. This eases matters for a time.

It is probable that the kidneys are unusually sensitive in hyperpressure states, even without interstitial nephritis. If hyperpressure continues long enough, both the kidney and the heart will be affected to some degree, yet for many years there may be no renal symptoms except perhaps many hyaline casts. The amount of urine may be normal or even subnormal, and of normal or raised gravity. If nycturia develops, increased 24-hour amount with low fixation of the specific gravity, contraction of the kidney is taking place, and a primary hyperpressure and moderate arterial thickening. The complexion is often that of health; the early morning toxic headaches of chronic nephritis are absent, and the case is far more slowly progressive. In the nephritis the pallor, headaches, backaches, weakness, rapid pulse, and more pronounced urinary findings distinguish the two conditions. With no signs of decompensation, an enlarged liver is suggestive of chronic nephritis. A few casts or traces of albumen do not mean necessarily nephritis.

In advanced cases attacks of abdominal distension, gas by belch and by rectum, attacks of indigestion relieved by free purgation and often accompanied by feelings of collapse; sweating and faintness, particularly on hot days or in warm rooms; indicate strain or stasis of the splanchnic area. Such cases probably have some sclerosis of the abdominal aorta and its branches. Persistent or periodic flatulency with hyperpressure is suggestive of something more serious than just a passing indigestion. The right heart may be complaining.

Headaches of variable degrees, dizziness, vertigo, ringing noises in the ears, insomnia, undue subjective feelings of nervousness and apprehension, may develop. After a restless night one rises tired, with a fullness in the head, a dislike for work, and a sense of unfitness for life. "Valley day" expresses the condition. Great irritability and the "blues" come in those of cheerful habit. These rather general symptoms are more characteristic of women. Here it is unfortunate for them to know the pressure readings. In addition to their blood pressure, too often they develop a pressure phobia, and all the ills of life are attributed to their high pressure. Allbutt thinks a unilateral headache frequently foreshadows a cerebral hemorrhage on the side of the pain. Transient palsies, hesitations in speech and temporary aphasia,

and rapid failure of vision, are symptoms that hurry the patient to his physician with a sense of arrest in his life."

The pathology of hyperpressure is a problem of cause, evolution, and result. It develops in those of the most intemperate habits. It is certainly a functional disturbance, and it may also be a structural disturbance, but the relations of these are indefinite. In favor of functional change, which in terms of the circulation is an increased tonus of the arterial wall, principally the media, are the rises in pressure due (1) to drugs, as strophanthus, digitalis, nicotine, caffeine, and perhaps atropine; (2) to the pressor products of the ductless glands, as adrenalin, pituitrin, and even the iodine crystalline substance in hyperplastic goiter; to the toxic non-protein nitrogen and uremic products in advanced nephritis and uremia; and (3) to the large group of overeating, constipated, toxic individuals, whose pressure is lowered by exercise, purgation and strict diet in quantity and quality. The nitrates, veratrum and aconite prove the influence of tonus on pressure, as does the high frequency current. They do not relax fibrous and calcified vessels. Tense, strained living and immoderate work play their part. Hyperpiesies and nephritis are too often food drunkards. Overeating, obesity, constipation, and a sedentary life are the foundation stones of hyperpressure. Add worry, mental strain, tenseness, long-time lack of relaxation over long periods, and the frame work is complete. The driving life, with its energy, ambition, worry, hurry, angers, and disappointments promotes hyperpressure and fitful nerves.

Hyperpressure is evolutionary in development, slow rather than rapid, and so gradual that the tendency often begins years before the discovery. The most rapid pathological rises occur in acute nephritis and uremia, but the ordinary case is measured by years. The circulation adapts itself to this mechanical strain and girds its strength to resistance. Hypertrophy of the media, thickening of the intima, enlargement of the heart are some of the vascular fortifications that resist the rise. By millimeters through the years the pressure increases, while these organs are likewise increasing their thickness and strength. Finally they begin to fail because they are nearing the end of their power to bear the strain.

It is probable that toxins not only raise pressure by increasing vascular tonus, but also produce a direct arteriosclerosis which in turn may raise pressure. In nephritis, as in hyperpiesia, the functional hyperpressure probably tends to precede the structural sclerosis. Toxins may not only raise pressure, but at the same time damage the wall and produce arteriosclerosis. The results on the circulatory system, and through it on the other organs, come from perpetual mechanical strain, the powerful systolic bang of a rapid pulse pressure and a hypertrophied heart. The smooth movements of the hypertrophied heart pass to the laboring struggle of increased dilatation, edema, and failure. It is probable that cerebral hemorrhage may occur directly from hyperpressure without disease of the ruptured vessel, though usually the vessel wall is also diseased. Allbutt records a brain with marks of 16 previous hemorrhages before the last mortal apoplexy came. The kidney is drawn into the struggle, and nephritis, uremia and renal failure may occur. There are three roads to the end: the arterial road by way of cerebral hemorrhage; the renal road by way of uremia; the cardiac road by way of decompensation.

It takes a good heart to undergo hypertrophy and maintain high pressure. If the renal findings and the functional test are fairly normal, hyperpressure is compatible with anesthesia and major operations. I have seen a serious operation with easy convalescence with pressures of 250-150-100. For a time as a result of the increased pressure the heart may even be stronger than before. Furthermore, the condition may be compensatory as in nephritis, because of the necessity for high pressure to force and filter the urien through contracted kidney.

The diagnosis of hyperpressure is easy. The interpretation is difficult. To find a patient in hyperpressure is no cause for alarm, or for a sudden going to bed for an indefinite period, or for persistent giving of vaso-dilators. One does not give digitalis on finding a murmur, but on symptoms of myocardial weakness or failure. Interpretation of the case is first, then treatment. For example, a man of 50, weight 210, no exercise for twenty-five years, hard work, heavy eater, constipated, blood pressure 175-110-65, under a vacation, exercise, bathing, less work, less food, less worry, laxatives, lost

20 pounds in weight, blood pressure dropped to 130-90-40. This was hyperpiesia, simple high pressure, before sclerosis had developed to any degree. The man needed to be taught how to live. A nephritic with hyperpressure needs treatment for nephritis, and probably vaso-dilators if the pressure reads far beyond 200. A case of aortic regurgitation with low diastolic and high systolic, premature contractions, dizziness, throbbing, and heaving precordium, needs treatment for his heart. The systolic pressure is not a disease, but rather the result of his aortic lesion.

The treatment depends upon the condition of the patient and the cause of the pressure. Hyperpressure taken early is more easily handled than when it is older, and more firmly intrenched in the circulatory mechanism. The increased peripheral resistance due to tonus is more easily handled, of course, than when due to arterio-capillary fibrosis. In general it may be said that in hyperpressure treatment consists of two parts: (1) general hygienic directions, and (2) drugs. Under general hygiene are included restrictions of diet even to snobbism. This diet is largely a decrease in quality and amount. For the first month it is often well to put the patient on milk, milk toast, fruits, and easy vegetables. The chief element is a decrease of the quantity. Tepid baths at bedtime containing three pounds of common salt and one-half pound of common soda in a bathtub two-thirds full of water, or 45 gallons, conduce to relaxation and sleep, and soothe irritable nerves. In some patients, not however, the very old, or those with cardiac symptoms or with edema, exercise very gentle at first, and usually walking or riding, is advisable. One doing long work with strain should shorten his hours, ease up, take more afternoons off, increase his vacations, and switch off to the sidetrack and rest whenever he can. It is well to put some of these patients to bed for two weeks, a month at most; but if with reduction of food there is not considerable reduction of pressure during their bed stay, a longer time is useless.

As for more direct drug treatment, I try to use the methods above before I take up the use of any vaso-dilators. I can then better tell the lability of the pressure and its degree of fixation. Doses of soda bicarbonate and phosphate of soda on rising with a

half grain to one grain of calomel weekly, ore especially eliminative and helpful. Sodium bromide is soothing to those with flaring nerves. The nitrites are helpful in some cases, particularly when the pressures run over 200. Of these the sodium nitrite in 3 to 5 grains with potassium nitrate, nitroglycerine on the tongue, spirits of glonoin or erethal tetranitrate in doses of one-half of one grain are our chief remedies. Sodium or potassium iodide is useful by decreasing the viscosity of the blood, but I find that unless the case be syphilitic it is well to drop it every other week, for in some way it seems to lose its power.

Two other remedies are probably neglected. The first of these is the high frequency current. I find with this that the pressure may drop from 10 to 35 mm. at a treatment. The higher the pressure, the less it is lowered, and it is more difficult to get results in the hyperpressure of nephritis. However, once or twice weekly it is useful in many cases. Bleeding, either by venesection, 6 to 20 ounces, or better by venepuncture yearly or twice yearly is helpful in the plethoric and red-faced, but it is to be avoided in the of degeneration of the myocardium are present.

Hyperpressure cases with cardiac symptoms will probably die a cardiac death; those with nephritic symptoms and the presence of the headache in the early morning will probably die a uremic death; and the attention is to be given more directly to the heart in the first type and to the kidneys in the second type. With cardiac failure treatment is to be directed, of course, to the heart, and in interstitial nephritis the treatment of that condition. Should apoplexy supervene it should be treated along the usual lines.

Finally the patient should be given to understand that deliberation, patience, a certain learning to be content with his state in life is necessary. He has come to the parting of the physical ways, and while he suffers no pain, he must nevertheless rearrange his habits and his living that his pressure may be lowered as much as possible, and that he may live as long as possible with higher pressure. He should not, by his living, help the causes and conditions of hyperpressure.

DISCUSSION OF DR. ROBERTS' PAPER.

Dr. W. L. Davis (Albany): I wish to thank Dr. Roberts for the excellent paper he has just read. I would like to ask him, if he had a patient who had high blood pressure, and who refused hospital treatment and died, what remedy would he then suggest?

Dr. E. S. Osborne (Savannah): Dr. Roberts mentioned one cause for high blood pressure—excitement or mental emotion. I saw a case that would illustrate what is to my mind a typical "drive," as Dr. Crile would term it. This patient had periodic headaches. During his vacation he would not be bothered. As soon as he would get down to work the blood pressure would begin to rise; it would get progressively higher and higher until it would reach a fulminating type, in which he would have violent headaches, and have to give up his business and go to bed. With a couple of days' rest he would recover from his headache, the pressure would go down and he would start another cycle. It appeared to me that that was a typical drive, that the mental faculties were driving the internal glands to excessive secretion and increasing the blood pressure. I included eye strain.

Another thing Dr. Roberts mentioned was that the high pulse pressure racks the machinery. I notice that particularly in cases where compensation is long. I have seen several cases that would complain of detonation. They say it sounded as though they were in a boiler shop. One case was a woman who had a pulse pressure of 100, and there was edema of the feet and legs. That case somewhat improved on digitalis.

Dr. W. R. Houston (Augusta): Dr. Roberts mentioned the use of digitalis in high blood pressure. The cases that S—— described as high blood pressure stasis, in which along with the very high blood pressure there begins to be edema, and venous stasis, certainly are cases in which digitalis is of the greatest value, and I simply rise to remind some that seem to have some doubts on the subject, as to the propriety of using digitalis in these high blood pressure cases. Usually, the curve of blood pressure for digitalis is that the blood pressure falls progressively day by day as the patient comes along. The digitalis has relieved the stasis and the necessity for the extra twists of the screw to raise the blood pressure is

removed. Subsequently, the blood pressure rises again as the patient continues to get better. I can judge of what the blood pressure means by the general condition of the patient. The blood pressure is falling and the patient is getting better, that is improvement; and when the blood pressure is rising and the patient is getting better, that is improvement.

Dr. Stewart R. Roberts (closing): Of course, I only read about one-third of my paper, and I thank Dr. Houston for calling attention to the fact that digitalis is sometimes indicated with even a high blood pressure. That is what I meant by the sentence that diagnosis is easy, but the interpretation is difficult. We do not know what treatment to begin, because sometimes we do not know what the cause is. This is one of the most difficult things in medicine, to know, sometimes, just what treatment to pursue, and sometimes we use one and then switch to another.

In regard to Dr. Davis' patient, when a patient presents himself and begins to dictate what food he shall eat, what rest he shall take, what medicine he shall take, I think perhaps the best thing the medical man can do in this instance is to resign before he begins, because I think with two doctors on the case, one of them being the patient, is one too many doctors. I do not think one is justified in taking on such a case, because he would neither be thanked for it, nor be paid for it, nor do any good to the patient.

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THE DIETETIC MANAGEMENT OF TYPHOID FEVER.*

By **J. E. Paullin, M.D.**, Professor of Clinical Medicine, Medical Department, Emory University, Atlanta, Georgia.

While nothing new is brought forward in the discussion of this subject it seems not unfair to present whatever evidence there might be in favor of any regimen employed in the care of typhoid patients which offers either directly or indirectly any aid to the subjects of this infection. While the number of cases here considered is small, probably too few to add anything to the already extensive literature on the subject, yet they have served to impress certain facts on our minds which are probably worth presenting.

It is of interest to note that Graves in 1848 advocated a more liberal diet in fevers, and again Shattuck in 1897, and Barrs in the same year, both advocated a much more liberal diet in typhoid than was at that time administered. Little attention, however, was given these clear and instructive articles until Warren Coleman made his plea for a more liberal diet in typhoid; since this time from his convincing experiences there has been a tendency to increase the amounts of food given in this disease.

It has been shown by numerous investigators that a normal individual at rest weighing 70 kilos (150 pounds) requires 33 calories per kilo, or approximately 2,300 daily of food to maintain his body weight (1 kilo is equivalent to 2.2 lbs., one calorie is the amount of heat necessary to raise one kilogram of water 1°C.) Fever patients weighing 70 kilos require about 40 calories per kilo, or approximately 3,000 calories to maintain their body weight. Small persons and young ones require more calories than the average individual. Repeated experiments have shown that in all fevers metabolism is greatly increased, and more particularly is this true of the katabolic process. Ewing and Wolff, who studied the metabolism in several cases of typhoid showed that there is a daily loss in the urine of 20

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to 30 grams of nitrogen when the patients are on a restricted diet; the urea nitrogen is considerably increased together with an increased elimination of creatinin and creatin. The increase particularly of creatinin and creatin points to active endogenous or tissue metabolism, and is assumed to come from the destruction of muscle tissue. There is equally as great katabolic changes occurring in the fat. In other words the patients with this infection keep up their existence by calling on their stored up fat and their muscle substance for fuel. In fatal cases of typhoid there is a severe derangement of the metabolism in that the nitrogen eliminated as urea diminishes and there is a marked increase in the "rest nitrogen," probably due to an inability of the liver to successfully handle the amino-acids. The marked disturbance of the nitrogenous equilibrium is due to three factors, (1) pyrexia, (2) toxæmia, (3) starvation—the latter is the one factor which is easiest controlled, and as has been demonstrated by Coleman and Schaeffer it is possible to prevent an excessive protein destruction by administering to these patients large amounts of carbohydrates. By feeding from 60 to 70 calories per kilo they were able to keep patients in nitrogenous equilibrium and make them gain in weight. It required, besides the carbohydrate, that the patient should receive from 65 to 90 grams of protein in the twenty-four hours.

The following dietary which I used for the past five years is the one advocated for the most part by Coleman:

Soups—Beef, Veal, Chicken, thickened with rice, barley, wheat flour, egg, milk. Tomato, Potato, well boiled rice, sago, barley can be used.

Cereals—Oatmeal, Barley, Cream of Wheat, Sago, Arrow Root, Cornmeal, Rice, Milk, Cream, Buttermilk, Whey, Junket, Koumiss, Matzoon, Cocoa, Chocolate, Raw Egg, White of Egg, Yolk of Egg, Custard, Egg and Milk, Egg-nog, Milk Toast, Crackers and Milk.

Soft Puddings—Blanc Mange, Corn Starch Pudding.

Thoroughly cooked macaroni and spaghetti. Apple sauce, lemonade, orangeade. Gelatine jellies.

The caloric value of the various food products is shown in the following table:

Milk	30 cc	(1 oz.)	20	Calories
20% cream	"	"	62	"
Buttermilk	"	"	10	"
Whey	"	"	10	"
Condensed milk ..	"	"	132	"
Butter	"	"	225	"
Whole egg.....	"	"	80	"
White of eggs.....			30	Calories
Yolk of eggs.....			50	"
Cane Sugar, 1 oz.....			116	"
Milk Sugar, 1 oz.....			116	"
Milk Sugar, 2 tablespoonfuls....			72	"
Barley flour, 1 oz.....			100	Calories
Rice flour, 1 oz.....			100	"
Boiled rice, 1 tablespoonful.....			60	"
Toast, 1 slice.....			80	"
Bread, 1 slice.....			80	"
Crackers, 1 oz.....			114	"
Apple sauce, 1 oz.....			30	"
Potato, 1 oz.....			25	"

The average typhoid diet, as arranged at the hospital, is about as follows:

6 a. m.—Hot milk, 6 ozs; 20% cream 1 oz. Lactose 1-2 oz.

8 a. m.—Well cooked Cereal 1 oz., 20% Cream 1 oz. Lactose 1 oz. Soft egg, piece toast, 5 gm. butter.

11 a. m.—Cocoa 8 oz., Cream 1 oz., Lactose 1-2 oz., Crackers 1 oz.

1 p. m.—Soup thickened with rice, or barley 8 oz., one slice toast, 5 gm. butter. Cereal 1 oz., with Cream 2 oz., Lactose 1-2 oz., Apple Sauce 1 oz.

3 p. m.—Ice cream, 1 plate, Crackers 1 oz.

5 p. m.—Orangeade with 1 egg, 1-2 Lactose.

7 p. m.—1 egg, 1 slice toast, milk 6 oz., cream 2 oz., lactose 1 oz., butter 5 gr.

9 p. m.—6 oz. milk, 1 oz. cream, 1 egg, 1 oz. lactose, flavored.

If the patient wakes up during the night or if he has to be awakened he is given a feeding similar to the one in the early morning. A diet, such as is outlined above, totals about 3,000 calories in the twenty-four hours. It can easily be increased or decreased at will, depending upon the condition of the patient, his appetite and his needs. The greater number of the Grady Hospital cases are admitted after they have been ill for some time, usually the mouth is quite foul, and there is considerable abdominal distension; with these cases we usually take the first day to clean up their mouths.

cleanse the bowels with enemata and commence by giving them 1,500 calories; the amount of food is daily increased by 500 calories until they are brought up to the point where they receive approximately 40 calories per kilo of weight. For the care of these patients it is absolutely essential that the services of a tactful and intelligent nurse be employed, one who understands the caloric value of food and who has originality enough to vary the diet without allowing any one article to become distasteful to the patient.

Not all patients during the course of their infection can be fed a sufficient amount of food; occasionally there will arise nausea, usually due to overfeeding, or a diarrhoea; when this occurs the quantity and the quality of the food must be temporarily changed, the former diet being gradually resumed. In the event certain articles of food are thought to disagree with the patient, either causing distension or diarrhoea, a careful examination of the stool will afford the necessary information to decrease this particular food.

After five years of experience with the high caloric diet, although on a limited number of cases, the things which have most impressed me are:

(1) The ease with which the patients take the required amount of food and the majority do so with relish.

(2) The clean, moist tongue, the clean sanitary mouth.

(3) The notable absence of abdominal distension and the rarely necessary high enema for its relief.

(4) The general comfort of the patient throughout his illness; the diminution of delirium.

(5) While no facilities were at hand for weighing these patients, yet the loss of body weight while present in all of them was remarkably diminished.

(6) The shortened period of convalescence.

(7) The marked diminution of the post-typhoid neurasthenias.

While it is not possible from so few cases to draw any conclusions as to the effect on the duration of the disease or on the increase of complications. These vary from year to year, but among the sixty-two cases it might be stated that there were two

deaths; one due to oedema of the lungs, resulting from a myocarditis; the other due to an uncontrolled hemorrhage. Four of the sixty-two had hemorrhages, and two had slight relapses. One very interesting case was complicated in the beginning with a lobar pneumonia; his typhoid infection was not recognized for two weeks from the onset of his illness; we immediately began to feed him, but did not succeed in preventing a post-typhoid sepsis; this, however, rapidly disappeared on taking the patient out of bed.

In conclusion I would say that to the average wage-earner the avoidance of a prolonged convalescence and a post-typhoid neurasthenia is of considerable moment; if after recovering from typhoid the individual is permitted within three weeks to resume his avocation, we have done for him what it has previously taken six to eight weeks to accomplish by the old method of treatment. It is not assumed that the high caloric diet shortens for one moment the disease itself—all that it hopes to accomplish is the maintenance of the individual's strength, enabling him to better resist and fight the bacteraemia and toxæmia of the disease, and to put him back on his feet as early as possible and in as good physical condition as the duration of his infection will permit.

DISCUSSION OF DR. PAULLIN'S PAPER.

Dr. W. S. Elkin (Atlanta): Following an experience of two years in dietetic treatment for typhoid similar to that described by Dr. Paullin, I am ready to concur entirely in his remarks concerning this phase of the treatment. In the last two years at the service at the City Hospital in Atlanta, and in private work, there have been something over fifty cases treated in this way from a dietetic standpoint. The results have been uniformly good when the cases were gotten in the early stages of the disease—within the first week or ten days; in fact, there has been no mortality in these fifty-odd cases where they came in at that early period. I was at a loss to attribute the so far good results to the dietetic treatment or to the vaccine. Formerly I was like many other practitioners, skeptical about the use of vaccine as a therapeutic agent. As it happened, when we started treating typhoid by feeding them after almost identically this method,

we began at the same time the use of sensitized vaccine. The patients have lost very little weight, they have not run a temperature that has been high, they have not been even uncomfortable, and they have lost in a way that terrific aspect that every sick typhoid manifests. Whether this is due to the liberal diet they receive—and I am inclined to think it is—or whether it is due to the vaccine, I can not say, but certainly, the patients gotten early and fed after this method have lost that sick aspect; they have lost their high temperatures, they have lost their delirium, and they have lost very little weight. I want to thank Dr. Paullin for bringing this excellent paper before us, and to assure him that there are others who are getting the same results with this means of treatment.

Dr. J. E. Paullin (closing): I have very little to say except that from such a small series of cases reported it is practically impossible to say whether this particular line of treatment shortens the duration of the disease. I am firmly convinced in my own mind that these patients do a great deal better than I have ever seen typhoid patients do before. We must, of course, bear in mind that typhoid patients vary in intensity, but from an experience which amounts to almost six years we certainly would have had in that time very severe cases. We have not found one that could not be fed highly of the caloric diet. It requires at times a good deal of patience on the part of the nurses to get these patients to take a sufficient amount of food, and in the beginning we do not try to force the high diet on them in the first two or three days, but by beginning to feed these patients 1,500 calories a day, and increasing it by 500 calories each day until they reach the required number of calories, we are able to take them to that point without producing nausea or diarrhoea. Nausea is evidence of overfeeding, and diarrhoea, as a rule, means too much fats. But cutting down the amount of fats which is given to these cases it is very easy to check the diarrhoea.

I have found that medical students and nurses are very good judges of the success of any particular form of treatment, and in the event they become as enthusiastic over a particular regimen suggested for this particular disease, it is very good evidence that there is something to it, and the nurses who

handle these cases in our wards at the Grady Hospital state they do not receive as many baths as the ordinary typhoid does, neither are they given as many enemas as the ordinary typhoid receives.

TREATMENT OF INFANTILE PARALYSIS.*

F. G. Hodgson, M.D., F.A.C.S., Professor of Orthopedic Surgery, Emory University, Atlanta, Georgia.

When this terrible calamity strikes a patient the attitude of the physician is usually one of great sympathy, but also of inaction. He is apt to say: "It is too bad, but nothing can be done." It is with this latter attitude that I wish to take exception; much can be done for these unfortunates. In the acute stage we know that there is a severe poison or toxin in the blood, and that the greatest damage is being done to the spinal cord. We should, therefore, direct our efforts to elimination of the poison and to relieving the congestion in the cord. Unfortunately at the present time we have no antitoxin, or vaccine to counteract the toxins. The serum of individuals who have recovered from poliomyelitis has been used. The serum of normal adults has been used, as it is well known that most adults are practically immune to the disease. But not enough evidence has yet been accumulated to determine the value of these procedures. The patient should be in bed, in a quiet room, on liquid diet, a cathartic given to eliminate through the intestinal canal. The limbs should be kept warm, as the circulation is usually poor.

EARLY LUMBAR PUNCTURE is a most important procedure. The spinal fluid is often found to be under considerable pressure and the relief of this pressure often relieves the nervous and mental symptoms which are present in the severe cases. The fluid is usually clear; there is a moderate increase in number of cells, both polynuclear and mononuclear, albumin and globulin are present, and Feblings test is positive. After the fluid is withdrawn, normal adult serum, or immune serum, 5 to 10 c.c. should be injected. This should be repeated daily for

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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eight days, or until the symptoms are greatly relieved. Injections of adrenolin (or epinephrin) 5 to 10 minims into the spinal canal has been used. It is claimed that this decreases the congestion in the spinal cord and diminished the amount of damage to the cord. Urotropin by the mouth should be given for its antiseptic action upon the spinal meninges. If the pain in the back or limbs is severe codeine may be given. These cases should, of course, be isolated for five weeks and the secretions from the nose and throat carefully destroyed. The room should be screened.

The pain in the limbs and back persist after the other acute symptoms subside. No massage or exercises should be given until this pain has practically disappeared. Particular attention should be paid to the spine and back muscles. As long as any tenderness persists in the back or along the spine, these patients should be kept lying down. Tenderness along the spine indicates that the inflammation is still present.

The **prevention of deformity** is the next most important step to be carried out. Toe drop may develop in the first few weeks. The weight of the bed clothes tends to push the toes down, then if the calf muscles are strong and the dorsal flexors of the foot weak a toe drop will develop. This may make it impossible for the patient to walk when he gets up, so it should be guarded against from the first. A simple posterior splint with a right angle foot piece made of plaster of paris or of wire is sufficient. A box or cradle made from 1-2 barrel hoops is a good arrangement to keep the covers from pressing down on the toes.

Flexion of the knees should be prevented, for the strong hamstring muscles have a tendency to overcome the quadriceps extensor which is apt to be weak. A muscle which is stretched is less apt to regain its power than one which is permitted to flex and regain its tone. Flexion of the knee can be prevented by a posterior splint or applying a light Buck's extension. Flexion at the hip is also apt to occur if these patients are allowed to lie for long periods of time with the legs drawn up toward the abdomen. This can be prevented by changing their position often or applying splints at night to hold the legs out straight.

Massage and muscle training exercises exercises properly, intelligently and persist-

ently carried out are the most important measures in determining the amount of muscle power that will be restored. A certain small percentage of cases will have a complete return of muscle power without any treatment, but the large number of totally paralyzed muscles and bed ridden chronic invalids could be prevented by proper massage and muscle training carried out over a period of two years. The details of these methods of treatment are too complex to discuss in a short paper. It should only be done by one who is specially trained for this work, for much harm can be done by overworking a weak muscle. Dr. Lovett has devised a method by which we can test the power of any group of muscles with scales. Accurate methods may be kept each week to determine whether muscles are gaining or losing strength. The circulation of paralyzed limbs is always poor; they are often blue and cold, and perspire freely. Baking the limb in an electric oven is, therefore, useful to increase the circulation—this is usually done for 15 to 30 minutes just before the massage and exercises are given. Woolen stockings and underwear should be worn in cold weather. Treatment with electricity is of less value than massage and exercises.

These patients should be allowed to sit up only after all tenderness and pain has gone from the back. If there is paralysis of any of the back muscles a light back brace should be worn while sitting up to prevent the development of a spinal curvature. This brace should be removed for massage and exercises and should not be worn at night or while lying down. They should be gotten up on their feet as soon as the leg muscles are strong enough to support them, but should not stay up long enough to get over tired. Light steel splints or braces are necessary in badly paralyzed cases, but these should not be worn constantly and should be discarded as soon as enough muscle power has returned to enable the patient to walk without them. The constant use of braces which are not absolutely necessary will interfere with proper muscular development. The operative treatment should not be undertaken until after a period of **two** years from the onset of the paralysis, for no one can determine how much muscle power will return or can be developed. The only exception to this rule is that sometimes

tenotomies have to be done to overcome contractions to allow the proper use of the limbs in walking. After two years of proper supervision and thorough course in massage and muscle training much can be done by operations to improve the condition of the badly paralyzed cases. The operations which give the best results are—(1) **tenotomies** to overcome contractures and correct deformities; (2) **stabilizing operations** on the joints to prevent excessive motion and give a firm foundation upon which to stand, such as arthrodesis, tendon fixation, silk ligaments, bone grafts and astragalectomy; (3) **tendon transplanting** to make an active muscle take up the function of a paralyzed one. Other operations, such as nerve transplantin, and nerve grafting have not proven successful.

The most important thing to remember about these cases is not to get discouraged and not to give up. A great deal can be done for those who are apparently hopelessly crippled for life. Even after the lapse of a number of years, muscles which are apparently paralyzed can be restored to power, deformities can be overcome, bed-ridden or crawling invalids can be gotten upon their feet and given a new outlook upon life and a usefulness to the community.

DISCUSSION OF DR. HODGSON'S PAPER.

Dr. J. W. Palmer (Ailey): I have had no special experience except in sporadic cases. I had a case last summer that impressed me with the fact that rest, absolute rest, absolute quiet, was one of the most important factors in the treatment of sporadic cases of infantile paralysis. We all remember the sporadic cases that occurred during the epidemic times in New York, that the community would be frightened and think it was an epidemic case. In this instance the parents took fright and rushed to the hospital with the child, and, of course, were sent back home. I do not think there could be any worse case than this one. She was first paralyzed in the limbs, and after this trip it took on a meningitis form, and the child was so it could not talk nor cry for a while. I attributed the severity to this trip. I did not exactly understand how much the doctor thought of this serum treatment, and I want him to state in his closing. I have a case or two that are wearing braces on one

limb, and I would like him to say how much he thinks braces should be worn or not worn.

Dr. Theodore Toepel (Atlanta): The condition of this disease is divided usually into three stages—the onset, the incipient stage, and the convalescent stage. I am glad that the Doctor brought out the point of exercise, which has been touched upon this afternoon in relation to heart disease, and how careful a person should be with it. That same rule will apply in the restoration of these muscles that have been paralyzed. Everybody is not able to restore the muscle function, but it should never be left to the layman, because more harm can be done than good. To prove this I have been reading some statistics gathered by Dr. Lovett during an epidemic he controlled. He says that the chances of improvement of muscles affected by paralysis by treatment are 6 to 1; under supervised exercise, 31-2 to 1; under home exercise with supervision, 2.8 to 1; while untreated affected muscles it is 1.9 to 1. In summarizing the plan of treatment, I would say that absolute rest during the state of convalescence and treating the symptoms as they arise should come first; second, massage in suitable cases; third, manipulation; fourth, foot-drop while in bed; fifth, an apparatus to prevent deformity as soon as the child walks and a support for the weakened muscles. The deformities are usually the result of neglect of precautionary measures.

Dr. F. C. Hodgson (closing): In regard to Dr. Palmer's remarks, the importance of this disease is very great, even if there is no epidemic present at this time, for we never know when an epidemic is going to break out. We should be prepared just the same as military preparedness. He also brought out the point of rest, which is most important in the early stages. In regard to the serum treatment, that has not been thoroughly tested out yet, but if it is used only in the early stages, before the paralysis, we get the best results. In regard to braces, they should be worn only when it is necessary for them to get out and get the proper exercise, and when they can not go without it. When braces are not necessary, they should be disregarded so they can walk and develop the muscles without them. I want to thank Dr. Toepel for his discussion, for what he had to say confirms what I said.

PRIMARY HEART STRAIN.***James H. Honan, M.D., Augusta, Georgia.**

The subject of Heart Strain, since its announcement on this program, has assumed relatively greater importance through the entrance of our country into the war, and the great or utmost demands which will be made on the strength of our men in defense and attack.

The heart of the youth, as we know, is marvelously elastic, capable in instances of extraordinary activity without injury or change of structure. Notwithstanding that our soldiers are taken at the age when the heart is at its highest self-protecting, rebounding stage, war and service will greatly increase the cases of heart strain, both primary and secondary. Before giving my observations and experience in civilian practice, let me say that every one of us American medical men should take advantage of every opportunity to urge universal training for our boys, and thus increase the endurance and power of those courageous hearts so ready to defend honor and right.

The greater internal and external demands on the soldier, the mobilization of the cells of the brain, the greater activity of the organs and tissues, the "human kinetic drive," as observed in warring Europe, has been clearly and ably presented by Dr. Crile in a number of the American Medical Association Journal.* In today's consideration of primary heart strain let us give attention to a few significant facts.

1st. That the frequency of such strain is much greater than is commonly recognized, and hence too often overlooked.

2d. That primary heart strain is often present without the manifestation of the familiar symptoms, and that recognition of such cases is of great importance.

3d. That the physician on having discovered the condition of primary heart strain must realize the close consideration the case demands, and that he promptly assume his part of the responsibility in watchfulness, in instructions and advice to the patient, in

explaining to the patient the real significance of co-operation.

If a bullet is found embedded in the heart of a patient, neither the doctor nor the patient needs urging to give the matter due consideration, although the bullet may do no great harm. There is something realistic and dramatic about a bullet wound, even when it is not at all tragic, which, unfortunately, it is in most instances. While heart attacks, occasioned from running for a street car, carrying a heavy dress suit, running upstairs, exertion in a football game, great mental excitement, overtension on duty, or other sudden extreme activities, physical or mental, are too commonplace to receive the attention they deserve. The patient is revived, and that is too often the end of it for the time being, until later a serious or progressive trouble is traced to the seemingly innocent onset, long previous and almost forgotten.

If medical aid was at all called, in too many instances the doctors have been satisfied that the patients rallied without any obvious manifestations of heart strain. Our excuse of seeming neglect may be a good one, as the patient or family may make clear to the physician that he is not to make further calls unless requested. There is nothing more difficult for a physician than this attitude—that every call he makes is in his personal interest.

In the practice of medicine, where unselfishness is the rule, however much the physician feels sensitive or hurt at any misinterpretation of his motive, he must recognize that his sensitiveness or pride may involve serious risk to the patient. If the physician called for the emergency be a stranger, he can always recommend that the family physician watch the case closely. The man in general practice can or should count on the confidence of his families. He need have no hesitancy in explaining the possibility of heart strain, the importance of due attention until an opinion can be given as to whether the heart is injured, whether acute strain may be overcome by proper restrictions and treatment. He should point out that neglect at this time may lead to progressive trouble, impossible to check.

When the acute form is present and extreme activity is followed by plain symptoms with expected sequences, the diagnosis is easily and readily made. The initial at-

*December 18, 1915, "The Kinetic Drive," G. W. Crile.

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tack occurs without hypertrophy, the strain often slight causing only sudden and brief arrest of the subject's movements or when very extensive, causing collapse and sudden death.

The condition of the myocardium has much to do with the probability of strain. Very slight exertion may produce strain in a myocardium depleted from an excess of toxins in the system, reduced in force by some debilitating disease, tired or exhausted from long-continued overwork.

The normal anatomic changes which take place during exercise, compensated for when the condition is normal, may constitute a strain when the tissues are below par.

The natural increase of pulse pressure during exercise from 40 m.m. of mercury to 100 or 110 m.m. of mercury, causes no distress under normal conditions, but should the myocardium be exhausted from overwork, or depleted from disease or the blood current surcharged with toxic products, it would not be able to stand the extra pressure put upon it by the usual exercise and a strain would be the result.

It is necessary, therefore, in these cases, to go carefully into the physical and mental activities at the time of and prior to the attack.

In the diagnosis of heart strain we have three important factors to reckon with, anatomical, functional and etiological.

The last mentioned is often the most important and I regret to say frequently neglected by the busy practitioner. A careful inquiry into these cases will often reveal a mental or physical burden which no heart should be called upon to carry and which sooner or later causes a myocardial strain that may prove the beginning of the end.

How often we hear of sudden death from heart trouble and that the family and deceased had been unaware of the trouble and danger! These are usually cases of myocardial strain which have occurred at intervals, without causing any serious embarrassment to the functional activity of the heart, until the final strain of an after-dinner speech or a rather rapid walk to the office after a hearty meal or some serious worry marks the sudden end.

Primary stretching due to over-exertion or inherent weakness of muscular walls, must be differentiated from a dilation due to a defective valve and regurgitation. This lat-

ter is compensatory and usually limited, holding a direct relation to the valvular defect and the amount of blood allowed to return to the ventricle during systole.

Heart strain is usually an evidence of weakness, often inherent in so far as it may be congenital, or, and more frequently, acquired by the misuse of the natural forces of the organ. The tendency with some medical writers today is to take little concern with these cases, when no dilation is manifested with the strain.

This is a mistake, and I believe no strain can occur without leaving the affected tissues somewhat impaired, even though it be an accidental strain in a perfectly normal myocardium.

Any obstruction to the pulmonary circulation may cause dilatation of the right side of the heart. Such obstruction occurs frequently in pneumonia, pulmonary edema or pleurisy with effusion. In my own practice I meet heart strain most frequently in men of 50 years or over—in that type of men who are physically strong for their years and who try to deceive themselves and those about them into believing they can do or stand the same physical strain they could at the age of 30.

Case 1. I have a patient under my care at present, 73 years old, who, stepping from his office one morning recently, observed that some of his factory employes were having difficulty in loading some goods. Unhesitatingly he rushed to their assistance. The sudden strenuous effort left him very limp with a weak rapid pulse which his physician reports was very irregular when he reached him a few minutes after the strain occurred. The patient did not lose consciousness, but felt rather confused and unsteady.

A few days after the patient arrived at my office with a soft diffused first sound of the heart, a weak rapid pulse. The polygraph showed an irregular pulse, irregular in force and volume. The digitalis, which was administered at the time of the occurrence, had somewhat controlled the erratic impulses of the fibrillating auricle.

The family physician should try to drive into the heads of these giddy old men that they had better accept the inevitable wear of age and not try to deceive themselves or others by dancing until their blood vessels stand out like blue cords in their necks, climbing golf courses hills until their faces

are purple, or lifting heavy weights, merely to prove the calendar is a liar and deceiver, and to prove further that it is only those who think that they are old who really are so. No doubt you have just such men in your practice today. I am meeting them every day.

These men are excellent business men of sound judgment, but show as little gumption as a child about their own physical condition.

Primary heart strain so common to the man past middle life is frequently found in young men—boys who have grown too rapidly for their hearts to keep pace with the general development. A typical case of this class came under my observation recently.

Case 2. A boy 19 years old had grown to a height of 5 feet, 10 inches. He had always been active in games, etc. In a hard tussle in a football game one day he became faint and had to rest. He soon recovered, but had no further interest in the game that day. An examination showed the heart to be undeveloped.

Case 3. Another interesting and rather typical case is that of Doctor A, 62 years old, who, on lifting a heavy trunk, was at once aware of a peculiar feeling in the precordia with an occasional sharp pain. He was also conscious that his heart was not regular in its action. On taking his pulse he found it intermitting. As he had never been conscious of his heart before, he realized something had happened. He called in one of his fellow practitioners who recognized the strain and advised complete rest. When it was deemed advisable for him to travel, he was sent to me, and has been under my care the past winter.

The pulse on his arrival here was weak and irregular, and though there was no pain, the patient experienced a peculiar sensation over the heart region. As he expressed it, he was frequently conscious of his heart—with treatment, rest and diet during his stay here, his pulse has become regular, the systole more normal. The blood pressure, which was on November 18, 1916, 112 m.m., Hy. systolic, 66 diastolic had increased to 142 m.m. sys. and 70 diastolic on April 16, 1917. The Doctor, endowed with a splendid appetite, could not resist the attractive viands on the Southern table, and his weight of 216 remains about the same.

Of the five properties which the muscle fiber of the myocardium possess, tonicity is

of vital importance. We know it is this quality in the myocardium which limits the stretching of the muscle during diastole. If the tonus of the muscle fiber is below normal, it will be unable to resist the on-rush of blood thrown into the ventricles and as a result, instead of the normal distension which occurs in the ventricle during diastole, there will be stretching of the tissues and rupture in the normal equilibrium which had limited the dilatation and overcome the force of the blood current. When a severe strain occurs once, it is much easier for it to occur a second or third time, unless there is complete reparation of the tissues of the initial lesion.

The impaired tone of the tissues restricts the efficiency of the heart action and is usually the beginning of cardiac insufficiency and ultimate failure.

Symptoms.

Irregularity is among the earliest signs of heart strain, and should be interpreted as significant of such, if suddenly appearing after a severe exertion. This is usually a complete irregularity from the onset. The polygram will demonstrate a fibrillation from the beginning, as may also be observed by the stethoscope and radial pulse. The pulse is also irregular in force and volume and the intermittance marked. Auscultation will also reveal a weak diffused first heart-sound, and a general enfeebled heart action. If the strain is extensive there will be an increased area of dullness due to dilatation, a marked dyspnea due to congestion in the pulmonary system. The skin assumes a grayish pallor owing to stasis in the capillaries.

The physical signs and subjective symptoms of primary heart strain are many times so marked as to make the diagnosis easy. The cases with less well marked symptoms are the ones which are slighted or neglected by patient and doctor until serious mischief has been done and often irreparable damage to the myocardium before the patient or family physician are aroused to the seriousness of the condition.

Treatment.

The important treatment in these cases is rest, absolute rest. This should be insisted upon until the myocardium has fully recovered its reserve force. Serious mistakes are often made by attending physicians who al-

low the patient to take exercise too soon after a severe strain. It is necessary that the attending physician guard with great care the patient through the transitional stage from complete bodily rest to active exercise. We know that exercise accelerates the pulse and increases the blood pressure; therefore, these two signs should be carefully noted after each exercise that we know exactly how much regulated activity to permit.

In severe cases every muscular movement should be interdicted and absolute rest enforced, until the tissues recover their reserve force. The diet should be light, nutritious and very digestible. The bowels and kidneys should be kept active. The intake of fluids should be reduced to a minimum, as should also salt and meats. Smoking should be stopped, indeed everything that might tend to raise the blood pressure should be carefully eliminated. Digitalis judiciously administered is our most valuable drug in these cases.

In the treatment, it is the imperative duty of the physician to assume his full share of the responsibility and to realize fully the dangers of any indifference to the condition. We must recognize the fact that no patient is able to judge for himself the importance of the condition.

There is often no pain, no shortness of breath—indeed, there may be nothing more than what the patient describes as a peculiar feeling over the precordia, usually attributed to a full meal, an accumulation of gas in the stomach, or almost any other cause except the true one. It is, therefore, necessary that we recognize the condition early and give our patient the benefit of all doubt, even at the risk of being dubbed an alarmist—that we make him realize the danger of all indiscretions.

It is my observation that we are entirely too lax in our care of these patients, particularly in our restriction of their physical exercise. How often do we hear that they have been discharged with that threadworn advice, "Oh, be a little quiet for a few days and you will be all right!" How much responsibility should attach to such a criminally careless advisor should a patient who received such half-hearted and unprofessional advice, commit some indiscretion with a fatal result!

These patients should receive positive and definite advice as to just how much exercise

they may take, the danger of the condition and the positive risk they incur in going beyond the restrictions. Since they have had one attack and lived through it, they are emboldened to take greater liberties with the reserve force of the myocardium until the stretching process has reached such a condition as to cause an embarrassment to that organ that is beyond repair.

Prognosis.

I wish to emphasize one important fact in regard to the prognosis in these cases, that is, that the prognosis in no small degree depends on the attending physician, on the assiduity he gives the case, and the recognition he has of its possible danger. Naturally the extent of the strain will be the guiding factor in the course of the trouble, but often what seems to be a hopeless stretching may almost recover its normal integrity if the patient can be kept absolutely quiet and treatment given in proper time.

That physicians suffer much from heart strain comes from the impossibility of their being able to restrict their activities as can be more or less easily done in other professions. Their work can not be limited to eight hours. They answer calls to patients when they are ill themselves. The exertion or tax on the physician in some emergency cases leaves the doctor exhausted. They are unable to take vacations when they need them most—not only because of the pecuniary loss, but chiefly because patients are depending upon them.

We are losing many of our most able medical men through this over sense of duty. We are thus prematurely bereaved of many a medical man whose experience and teachings might be of great value to us all for many years, and whose too great generosity of himself thus entirely deprives the patient and his colleagues of his valuable judgment.

Every year I have occasion to caution individually a number of my colleagues, and know that a repetition to any assemblage of Doctors can not be out of place. I may venture to say that there is scarcely one of our number here today who does not recall instances of being individually overtaxed to the danger point, if not beyond it.

We one and all need to be reminded from time to time that it is only by some care of ourselves that we can best care for others.

DISCUSSION OF DR. HONAN'S PAPER.

Dr. O. H. Weaver (Macon): I have listened to this very important paper—I say “important,” because it is an important subject to all of us, and is a condition that patients are subject to at all ages. It is one of those subjects that it would be well if the public generally could hear discussed the same as they do tuberculosis, sanitation and other important health matters. I think it would be well if we as physicians would take the lesson to heart and apply it personally, because there is no class of people that perhaps are subject to more of the conditions which the Doctor describes than the physician, the hard-working physician. There are just a few practical points that I would like to speak of briefly. One is the danger in competitive athletics. Frequently in our colleges young men who work in the gymnasium ruin their heart muscles and cripple themselves for life. I believe it would be well if these young men were not submitted to an examination by their athletic trainer, who most times is not a physician and is not in position to say just what a man can stand, but I believe where it is possible the school physician should pass on these boys and girls and not permit them, if they have any tendency at all to heart lesion, to enter into any contest that is dangerous.

Another matter, and it is an important one, and one that I believe physicians are frequently wrong in, and that is the idea of getting our patients out of bed too early; that is, letting them get up before the heart has had time to react and getting them in condition to stand the strain of the patient being up and on his feet. I believe this applies to practically all conditions, and especially in the young—take scarlet fever or measles. I do not believe we appreciate the effect on the myocardium of letting these patients up before they are in condition. I believe that is frequently a cause of heart strain.

Another thing is that I am satisfied a great many physicians when examining the patient do not consider the patient has heart disease unless they can distinguish a loud murmur. That, of course, is a great mistake, because frequently in the most serious trouble there is no murmur at all, and as a matter of fact, sometimes the murmur is in a sense a song of joy.

Dr. C. J. Montgomery (Augusta): First, I want to express my appreciation of Dr. Honan's paper, which I think covered the ground very thoroughly. But it strikes me there is one factor in connection with these cases on which an entire paper might be written, and that is the question of the relation of exercise to the development of heart strain and the kind of exercise which would tend either to produce it or prevent it. It seems to me that these illustrations which have been brought out are cases of sudden, violent exercise, and I believe that it is practically in cases of sudden violent exercise that these heart strains and sudden dilations practically always take place. Even in climbing the golf hills, which the Doctor referred to, I believe unless a heart is considerably diseased, has already undergone considerable degenerative process, it is very rare that there is an acute strain produced by that type of exercise, provided it were undertaken slowly; but in the case of suddenly running up steps, even in the young, I think it is not good. One thing, the sudden throwing of one's entire force to cranking an automobile, has produced many a heart strain. On the contrary, I believe that if we train ourselves to take graduated exercise, the healthfulness and invigoration of the heart would ensue, and thus it would resist any strain or dilation which it might suffer. But the chief thing, in my opinion, is to avoid the sudden stress, throwing the entire muscular effort into play at once instead of gradually working up to it.

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UNIVERSAL MILITARY TRAINING LEAGUE.

It must be obvious to thinking people, if we are ever to adopt Universal Military Training as the policy of this country, that **this is the time to do so**. The people are beginning to see more clearly the obligations of citizenship, including national defense; and they are learning that **only trained men** can be used in the defense of our country.

The people are also noting the manly bearing of the thousands of young men who have had some military training. They are beginning to see and understand the importance of physical training and rigorous discipline—which the medical profession so well knows.

This training not only makes the young man stronger and better able to resist dis-

ease, better able to fight life's battles, as well as to defend the nation in a crisis; but it broadens his vision and creates a patriotism of service.

There is another angle of supreme importance. In our social structure today much unrest prevails. Lines of cleavage are forming and their tendency is to broaden and deepen. The most effective way of bridging this over and bringing the classes to a better understanding of the problems of each is Universal Military training. This brings boys of all classes and from all walks of life together in camp, gives them a common viewpoint; and the rigorous discipline and intensive training will be a great factor, not only in saving democracy, but in making it efficient.

FOR A MEDICAL OFFICERS' RESERVE CORPS.

At a recent meeting in Chicago of the States Committees of the National Council of Defense it was decided to petition congress to create a Reserve Medical Officers' Reserve Corps. When this is created, every qualified physician at any age will be given the opportunity and honor to volunteer his services and be enrolled. After this every physician will be in a position either to wear the insignia of honor of the Reserve Medical Officers' Reserve Corps, or the uniforms of active service in the Medical Officers' Reserve Corps.

From the new Reserve Medical Officers' Reserve Corps the Surgeon General will be able to select medical officers as they are required for service in France or at home.

The present great problems are: The training of physicians in civil practice for military duty.

The protection of the army in training in this country from venereal infection.

The future great problem when our wounded begin to return to this country, will be the reconstruction and re-education of the crippled soldiers.

The great and only necessity of the present is the successful carrying on of this war.

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AUGUSTA, GA., JANUARY, 1918

No. 9

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"RADIUM AS A THERAPEUTIC AGENT FOR CANCER OF THE CERVIX AND UTERINE HEMORRHAGES.*

Dr. O. D. Hall, Atlanta, Georgia.

Some of the cases that I am about to report have been regarded by surgeons as inoperable. I purposely report these inoperable cases for the reason that there was no other means of relief or cure for them. They belong to that type of patients beyond the reach of any other therapeutic agent. It is unpleasant to the physician to be unable to offer them any hope of relief.

The most troublesome symptoms that these patients have are offensive odor, hemorrhage and pain. These symptoms are very readily relieved by the use of radium, if metastitis has not gone beyond the reach of it. One of the most striking conditions of cancer, I find, is a large hard mass of the cervix, which will cause one to conclude that

there is no relief for the patient. Yet, such a case may yield very readily to radium treatment? To our surprise there has been less metastitis than one would find in seemingly more hopeful cases. Often I see patients with a small ulcer on the cervix, which might cause one to believe that excellent results could be obtained from such a case, but to his surprise and sorrow he finds that there is a metastitis to adjacent parts, and he can accomplish practically nothing with radium. This condition leads one to believe that each individual has certain resisting power, which we have been unable to understand. Dr. Gaylord, of Buffalo, has shown us some very interesting facts along this line in his wonderful research work on cancers. He states that radium does its work by increasing the lymphocytes of the blood. This I have never been able to prove or disprove; but I believe he is on the right line, and, sooner or later, will show us some wonderful things in the way of curing cancer.

Mrs. F. R., age 60, was referred to me by Dr. L. Sage Hardin, who found that she had a malignancy of the cervix; she had been having hemorrhage since January, 1916. Dr.

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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Hardin did a complete hysterectomy on July 28th, following. About twenty days after this operation I gave her twenty hours of radiation. This was done as a precaution, and up to the present time the patient has had no recurrence, and she says "that her health is as good as usual." It is true that it is only a short time since she received the treatment and, therefore, we do not lay any claim to a permanent cure, as we all know that not a sufficient time has elapsed to enable us to pass final judgment on the case; I report this case only to show that in operable cases it is much better to operate, and then as a precaution it is well to use radium because frequently we know that in doing an operation, cells are distributed about in raw tissue, which furnishes a very fertile field for a recurrence. I should have stated, at the outset, that Dr. Funke made a pathological examination and found this to be carcinoma.

Mrs. W. O. T., age 52, was referred to me by Dr. Manget, who had not examined her but her husband, who is a physician, consulted Dr. Manget for advice, stating to him that Dr. E. C. Davis had examined her a year previous to this time and found that she had cancer of the cervix. I saw her December 6, 1916, and made an examination and found the cervix practically filled with a cancerous mass. The patient had had nausea, vomiting, and pain in the abdomen, was cachectic, was unable to sleep on account of pain, had bladder trouble, there being an involvement of the bladder and rectum.

Her husband was so anxious for us to do something for her, we, therefore, decided to give her radium treatment, thinking that perhaps it would relieve her from pain and render her more comfortable. On December 6th and 7th I gave her forty-eight hours. Two weeks after I made an examination and found that the mass had almost disappeared; the cervix was perfectly smooth and very thin on account of the loss of so much tissue. I could feel only one place that showed cancerous tissue, and that was on the posterior lip of the cervix extending to the vaginal wall. I treated her nineteen hours on January 11th. While the vagina was freed from cancerous tissue, so far as I could feel or see, yet she was not benefited; she continued to suffer from nausea, vomiting and pain. Dr. Manget, who examined her later, stated that he found the kidney and practically

all the pelvic organs involved. This, of course, was the result of metastasis. No results can be obtained where radium does not come in direct contact with the pathology. This case, I must say, was not benefited, so far as relieving her from pain is concerned, which we had hoped to accomplish.

G. G. (colored), age 30, was referred to me by Dr. E. C. Davis. Family history negative. The patient had been having hemorrhage and pain for ten months previous to the time I saw her. There was a large ulcer on the left side of the cervix. On November 19th and 20th I gave her thirty-six hours of treatment. On December 13th, I gave her fifteen hours' treatment. On January 27th, the cervix seemed to be perfectly normal. At this time I gave her fourteen hours as a matter of safety. I have heard nothing from her since that time, but feel sure that she must be doing well, otherwise she would more than likely have returned for further treatment.

T. S. (colored), age 50, family history negative. Patient was the mother of eleven children, no miscarriages, had a laceration of the cervix since the birth of her first child. She was referred to me by Dr. E. C. Davis, who regarded her as inoperable. On examination I found the vagina practically full of a cancerous mass from the cervix. The bladder and rectum were involved. Patient had been in bed for eleven weeks and was very cachectic. At first I decided not to treat her, as her condition seemed to be hopeless; nevertheless, on November 23d, I gave her eighteen hours' treatment, more for the purpose of stopping the hemorrhage than anything else. On January 3, 1917, Spellman Hospital called me, and said that this patient had returned and was very much better and wished me to see her. I was surprised to find her practically free from pain, and to learn that she had had no hemorrhage since her treatment, and that the cervix was very much improved. On January 3d and 4th, I gave her treatment covering a period of forty-eight hours. On March 22d, I saw her. She had gained ten pounds, and stated that she was feeling very well. The cervix was very much better. Of course, this patient will not be cured, but I report this case to show that frequently such cases that seem hopeless can be benefited and rendered more comfortable during the remainder of their life.

Mrs. S. T., age 50, was referred to me by Dr. L. Sage Hardin. On examining her we found a large cauliflower growth on the cervix, which almost filled the vagina. There being so much cancerous mass; we decided to reach out the cervix with an electric cauterizer. This was done by Dr. Hardin on August 10th. I treated her eighteen hours on August 18th, twenty-four on the 22d, and twenty-two hours on August 24th. Patient went home in September, and on October 10th, returned, and on examination I found an enlarged gland in the left inguinal region. I treated this gland fourteen hours, and the cervix twenty-two hours on the following day. The patient returned home, and in accordance with our instructions she returned to us on January 2, 1917. In her own words she said: "I had the best Christmas of my life; I did not expect to be alive at that time." She was at about her normal weight, had good appetite and felt perfectly well. Dr. Hardin and I made an examination and were unable to find any recurrence of her trouble. However, I gave her treatment for a period of thirteen hours on January 2d.

Mrs. C. C. H., age 52. This patient was referred to me by Dr. Manget, who had found that she was an inoperable case. Family history negative. Patient was the mother of eight children, had given birth to a set of twins at which time she had a bad laceration of the cervix. She had had uterine hemorrhages for the last six months; she was so anemic from the loss of blood that she was unable to raise her head from her pillow. The cervix had a large mass of cancerous tissue extending around the posterior and anterior lips. This seemed to have come from the inside of the cervix. On July 10th, I treated her fourteen hours. Upon removing the radium I found that her hemorrhage had ceased. She went home and returned home in two weeks; she stated that she had had no hemorrhage since her last treatment until two days before her return. At this time I gave her twenty hours. On October 26th, patient returned for further treatment, and at this time I gave her twenty-two hours, and advised her to come back about the middle of December. I heard nothing from her until the last of January, at which time she stated that she had had another hemorrhage, and on examining her I found an nleer on the posterior lip of the cervix. She

was complaining of quite a good deal of pain. I gave her treatment at this time, but she did not improve, so we curetted the cervix and placed the radium therein and let it remain for twenty-two hours. At present I am unable to say what the outcome will be in this case, but I would like to call your attention to one feature of it, that is, that this woman who was unable to raise her head from the pillow, was in good health from the middle of September to the middle of January, and I can not help but believe if she had returned on or about the middle of December, as she was instructed to do, she would have been in good health today.

Mrs. J. T. H., age 62, family history negative; was referred to me by Dr. Floyd W. McRae, who regarded her as inoperable. There was a very large growth of hard nodules on the cervix, extending around the entire margin. Dr. McRae attempted to curett this cervix before placing the radium, but it was so hard that he was unable to accomplish much in this operation. It was almost like cartilage. We placed the radium in the cervix and it remained there for forty-eight hours, the position of the radium having been changed once. The patient returned for further treatment on January 27th, at which time the cervix was freed of its hard mass; she had had no more hemorrhages, and stated that she felt very well. At this time I gave her nineteen hours. She returned on March 18th, and I found her condition very much better. One feature of this case, to which I desire to call your attention, is that this patient has had no pain, and her only reason for consulting a physician was because of two hemorrhages that she had had; yet there was a large mass on the cervix, of which she knew nothing. I think the prognosis in this case is very favorable, as it is this type of cancer which we obtain the best results in radium treatment.

Mrs. J. C. M., age 48, was referred to me by Dr. L. Sage Hardin. Her family history was negative. Dr. Hardin had been treating her for two years for uterine hemorrhage. She would bleed as long as two months at a time, and there was a continuous flow of fluid of a chocolate color between these hemorrhage periods. The uterus was large and boggy, cervix was more than twice the normal size. We could find no tumors of any kind. I saw her on July 2d,

of last year, and treated her nineteen hours. On removing the radium the hemorrhage had stopped and the patient complained of nausea and headache, which is very common after a long radiation of the uterus. Patient returned in about six weeks, and stated that she had had something like a normal menstruation. At this time I gave her twelve hours' treatment. This would, perhaps, not be necessary, but the patient lived quite a distance from Atlanta, so I gave her this treatment as a matter of precaution. At this time the uterus was practically normal. A few weeks ago I saw the patient, and she stated that she had had no hemorrhages nor menstruation and her health was good. Her trouble was evidently Endometritis, which the radium had dried up, and as a result there could be no hemorrhage, for she was past her menopause.

Mrs. R. F. C., age 32, was referred to me by Dr. L. Sage Hardin, who had been treating her two years. This patient had the same trouble as the above case during a period of two years. I saw her on July 20th, and at that time I gave her fifteen hours' treatment, radium being placed up in the uterus. Patient had no more hemorrhage, but continued to have a small flow of this chocolate-colored fluid for about three weeks. Then she had a normal menstruation; uterus was not normal in six weeks after treatment, but was still large. At this time we thought of giving her another treatment, but did not do so, as the cervix was hard to dilate; therefore, we decided that we would have to carry her to the hospital and give her gas. After the lapse of a week the discharge had ceased and patient said she was feeling fine, so we decided to wait awhile longer. As her condition continued to improve, we gave her no more treatment. At present her weight is above normal and the uterus has contracted to its normal size.

The most hopeful outlook for the cure of cancer of the cervix and uterus is treating them in the pre-cancerous stage. The last two cases reported, while I would not say that they are or were precancerous, but we all know that the symptoms given are frequently the forerunner of cancer. Uterine hemorrhages will cause the patient to consult a physician more quickly than anything else, provided there is not some grandmother or friend who tells them that it is the change of life taking place. It is natural, they say,

which frequently causes the patient to become contented and will go for months having these hemorrhages. When they consult a physician, they are very much surprised when he tells them that they have cancer. It is the duty of every family physician to regard these uterine hemorrhages as a serious trouble, and he should always make a pelvic examination, for often he can diagnose the case and save the patient from future trouble.

There are some radiologists who are using radium to destroy large fibroids and other large tumors. This I regard very bad practice and really very dangerous to the patient. This procedure, I must confess, is a thing that appeals to the patient, since it means a very short anesthetic and eliminates the use of the knife, two things of which the patient has a horror. It is quite true that radium will destroy very large tumors, but let's see for a moment how it does it. The great penetrating power penetrates the tumor, destroys the blood vessels and in this way the tumor breaks down, if there be no drainage, as there would be in a great many tumors, the patient has a large quantity of broken down tissue, which must be thrown off through the excretory organs and thereby causes a toxic condition of the patient.

I desire to give my opinion in regard to surgeons doing a hysterectomy on these cases. When a patient consults a surgeon and tells him that she has been having uterine hemorrhages for some time, and he makes a thorough examination, finding no tumor—all he sees is a large boggy uterus with an inflamed cervix—and he advises a hysterectomy on this patient, at the same time having access to radium or X-ray, he is just as much out of his field as the radiologist is in breaking down these large tumors with radium. For if the patient is treated with a sufficient quantity of radium or by X-ray for a period of twelve or twenty hours, it is certain that this hemorrhage will stop in a day or so.

You will recall that in the cancer cases I have reported, I laid no claim to a permanent cure, but if you will pardon me, I will make a statement which may seem very broad. I believe that if these uterine hemorrhage cases had radium early enough, there would be a great decrease in the number of uterine cancers.

DISCUSSION OF DR. HALL'S PAPER.

Dr. L. S. Hardin (Atlanta): For years I was skeptical as to the use of radium, but several years ago, after using the Percy cautery and doing a lot of laparotomy, and all my patients dying, I became disgusted with that and since seeing the use of radium, I have been very much impressed, because I have seen cases that have been heretofore inoperable very much benefited. One instance that he mentions, where the uterus was reamed out and radium applied the patient was in my office in the last month, and the cervix and vault of the vagina is perfectly smooth. I have seen quite a little work in connection with the uterus, and also in protracted hemorrhage. The case he mentioned we had under observation for two years for uterine hemorrhage. Medicine had no effect in controlling it, and she had at one time a haemoglobin of 35. An application of radium was made for twelve hours and controlled her bleeding and the patient has gained rapidly in strength and in weight.

There are certain factors that come into play, and I do not believe that operation should be done on the uterus or elsewhere after the use of radium. It produces contraction of the white elastic tissue and makes it very hard. I believe the uterus should be removed beforehand where it is possible, and also in those cases which we pronounce inoperable, where there is extension into the broad ligament, we may leave an opening into the vault of the vagina and apply the radium into the soft tissue. In noticing the action of radium you will find that if you go into the bony areas you will destroy the malignancy, while if it is through the thick tissue it simply stimulates the outlying tissue and I believe the growth is worse than if it had been let alone. I have been very much pleased with its use.

Dr. O. D. Hall (closing): I have very little to add, unless it is to stress somewhat the last two cases that I reported, the cases of uterine hemorrhage. These cases, I have treated something like a dozen, and they have never given me any more trouble. The case I reported first was a case that I gave the second treatment. I do not think it would have been necessary, but I was a little afraid, as it was one of my first cases, and I thought perhaps I had not given enough. But the other cases have never come back

for any more treatment. I keep in touch with them all, but they never have had any more hemorrhage. Frequently these cases are those women that have passed the menopause, and they are not menstruating, as they think, but are having hemorrhage. These cases will stop, as a rule, and have no more hemorrhage. The younger women that I have treated, who have not reached the years of the menopause, menstruate on just the same. I think it is possible to really destroy menstruation by treating them long enough, and in some cases you might find it necessary; but in the younger women it frequently brings about normal menstruation.

"SOUTHERN SURGEONS FOR SOUTHERN SOLDIERS."*

Charles C. Harrold, M.D., F.A.C.S., Major Medical Corps, National Guard Georgia.

President and Gentlemen:

My original article, written a month ago, is out of date, so rapidly have events come to pass lately. My summary no longer summarizes and my original introduction would no longer introduce what follows.

I can no longer deal with the words "if" or even "when," for we have left the subjunctive mood and the future tense and are dealing with the present. We are no longer dealing with the subjunctive, but with the imperative mood. It is not a question any longer "If we go to war." We are at war right now, though very few of us seem to realize it—but we **are** at war and we doctors must wake up to the fact. I use the word "Must" advisedly, for we have a duty set before us and it **has** to be done.

Right here and now I wish to state that this question of what we have to do, is a direct personal question. It can not be met by resolutions and by men gathered around a table in committee talking about what men we can get to do this, and what men to do that. This question of duty is staring every individual man in this hall in the face, and it is his own personal responsibility. I suppose that every man here was born under the flag and has prospered under it to a greater or less degree. Some

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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have grown fat and rich under its folds. Now how many of us are ready to pay the debt we owe?

Many a man in our profession in Georgia has prospered from fat fees from the men and women of the state. The sons of these men and women are soon going out to defend the flag. Surely these sons are entitled to as good medical and surgical care as their fathers and mothers. Now, mark you, they will not get it unless the best doctors of Georgia respond to the call and go with the colors. Three boys of my own blood will be there. Suppose one of them becomes ill in his mobilization camp. Suppose he gets an acute appendix. Who is going to look after him? Who will operate upon him? Will it be some young doctor fresh from his halls of learning and who has gone into the service for the princely sum of \$166 per month and the experience he will get? Or will it be one of the surgeons whom his mother would choose if he were back in civil life and pay \$500 for the privilege of having him do the work? Again, suppose one of your own sons is injured "in line of duty"—and many Georgia sons will be injured "in line of duty." The very words should make the blood move more quickly in our veins. Suppose it is **your** son. You will have absolutely nothing to say as to his care. If his face is torn and mutilated—who is going to do the plastic work? Is it going to be some young lieutenant fresh from school? Or are Georgia's best surgeons going to be there in Georgia's Base Hospital? If your son happens to be near Ohio troops you need not worry—for Crile will be there and with good luck your son or my nephews may get in his hospital. If we are near New York, then they may be sent to the Roosevelt Base Hospital with Brewer. Or if it happens when our trench is close to an English trench—possibly he may fall into the hands of Moynihan or Lane or Robert Jones. All these world famous surgeons are doing their duty. Will Georgia's best surgeons be there, or will they still beat home getting rich from the fathers and mothers and the boys and girls left behind?

I tell you the eyes of the state will be upon this profession of ours and especially upon our base hospital where our really sick boys and men will have to go. Woe unto us if this hospital is filled with inexperienced men. The very best internists in the state

should be there—the very best pathologists—X-ray men and men to work on the eyes and ears. Of course, the best surgeons should be there—this goes without saying. There will be room for 21 doctors in this hospital, and I understand that it is already being organized. God grant that when I have to send men of the Second Georgia back from the front, that I will be able to say, "It is all right, son; if I were sick I would feel perfectly safe in turning myself over to them." It is no personal question with me. My work is cut out for me, and I will have absolutely nothing to say about what I have to do. My work will be up with the men at the front, and I may never see the inside of the real base hospitals where our men will have to go. But just think what a feeling of assurance it would give the men in a regiment to know that the same surgeon who would operate upon his father if he were ill, is right there in the base hospital to work on him when he is hurt! Think what a feeling of relief it would give the surgeons and the commanding officers with the troops to know that the most famous doctors in Georgia were in the hospital!

God knows that we want no scandals about our Medical Department looking after our Georgia youth, and I do not wish to start anything; but I want MEN in those base hospitals, not boys; and I spell that word MEN with capital letters. It will be no child's play. I will want doctors there who can **cure** and not doctors there to learn on the boys from my regiment. I hope to see the Base Hospital which handles sick soldiers from Georgia, not a school for experience, but a well run, well organized institution manned by the very best men that our state can furnish.

Now I do not think that Georgia surgeons are better than men from other states—but I feel like Captain Bob Hazlehurst in Macon did once when he was interrupted in the midst of a hot political speech. A man in the crowd called out, "Yes, Captain, but folks 'lows as how you thinks you are better than anybody else." Quick as a rifle shot the reply came back, "I am as good as anybody, and a damn sight better than a lot." Well, I feel that way about our surgeons—but they will not do our troops any good if they do not wake up and join either

the reserve or the Red Cross and make themselves available.

Now, I do not wish to be misunderstood about the young doctors in the state. I think that they are needed also, that is, the real good ones are. I think that there is a place for them also—but I do not think that that place is in the Red Cross or in the Base Hospitals. There is room there for a certain number of them—but I think that the vast majority of them should be in the Medical Reserve—or rather in the Medical Section of the Officers' Reserve Corps. They will then be available for work WITH the troops and will, I suppose, in each case be under direction and military discipline of superior officers who have had some training in field and camp sanitation.

Now I think that as a class we doctors are the most conceited lot of men in the world. The public is, I think, to a great extent responsible for it. From the time the janitor in the dissecting room first calls a student "Doctor" to the time of his death he is always set apart as a sort of superior being. This, of course, because the public knows nothing at all about our line of work. Consequently, the impression is thrust upon us more and more that we are superior; that we, each and all of us, finally become to believe that every man who can sign M.D. after his name is a full complete entity—is a doctor in every possible sense of the word, and is a finished product—a perfect family physician, surgeon, internist and sanitarian.

Now this is the reason why the public at large is not at all worried over this question of medical and sanitary care of troops. They know that we doctors exist by the thousand and they think that as soon as we are needed that we will come forward and fit ourselves to our tasks. Well, I think that we will come forward—a lot of us will, at any rate—but what we want is the best. Now, I have spoken enough about the men with surgical experience being needed. The other class which is needed is the doctors with any experience about sanitation. I am frank enough to say that until I went into army work I knew nothing, and I went through what was at that time supposed to be one of the best schools in America, namely, Columbia, N. Y. I think that knowledge of sanitation is so important that with troops in the field I had rather have as ranking medical officer in the regiment our old friend, long-legged

Fort, of hookworm fame, than either Dr. Mayo or Dr. Crile. Now, if you think I am wrong about this you have only to study the camps of '98 and the camps in 1917 and see the difference.

In 1917 the National Guard Camps were all supplied, for part of the time at least, with a Medical Officer from the regular army.

In 1898 there was a camp of volunteers in Jacksonville of about 10,000 men. They were camped there for four months. During this time 248 men died in the camp from typhoid fever alone.

In 1916 we had over 4,000 volunteers camped in Macon for four months. Some of them brought typhoid fever to the camp with them—four of them having it in the first few weeks of the camp. Moreover, there was the customary amount of typhoid fever in Macon at this time. Not one man died from typhoid. I know you will say that this is no test, for we have the vaccine now and they did not have it in '98. This is true—but how about other diseases.

The Jacksonville Camp in '98 with 10,000 men had 281 deaths from other diseases than typhoid fever. The Macon Camp, with 4,000, had only four deaths and only one of these was from disease—namely pneumonia, the other three being from violence, namely, lightning, murder and drowning. In other words, if we count typhoid fever the death rate in Jacksonville was 50 times as high as the Macon Camp. If we do not consider typhoid fever the Jacksonville death rate was 28 times as high. Again, if we count neither typhoid fever nor deaths from violence (where the sanitary part of the problem does not enter), the Jacksonville death rate was 120 times as high as the death rate in the Macon Camp.

Now I wish it distinctly understood that I am not claiming this record for myself for the Macon Camp, and I am not claiming that Macon is such a wonderfully healthful spot and all that bull. I am no Mexican athlete, as the boys on the border would say. The splendid result we got in Macon (and it was a splendid result and we are proud of it) was due to a combination of things—but that combination could be summed up in the two words, "medically prepared." Now, I think that the National Guard of Georgia, as at present constituted, is unquestionably medically prepared for handling the present

number of troops in the field in time of peace. How well we could do it in time of war we do not know. Conditions would have been far different, of course, and how well we Georgia surgeons can do emergency surgery is problematical. The sanitary end of the question is, I think, settled for the present National Guard. Right here I wish to say that if you ever get into this line of work you will learn that the main thing is to instruct the line officers in what you wish done and how to do it—and see to it that the line officers, both junior and senior, have confidence in you. I think this is more than half the battle.

Now in these camps which the Georgia National Guard have been in, every senior Medical Officer has had some previous training in state encampments, had attended lectures and correspondence schools under a regular army surgeon—and the commanding officers of these camps had had corresponding training. Moreover, in the big camps there were frequent inspections made by regular army surgeons. I mentioned having a regular army surgeon in every camp for a while. Now these men did not stay in camps all the time, but did stay long enough to see that things were started right and moving smoothly. I do not wish for one moment for any one to think that I consider these army surgeons better doctors than we are. Far from it; I know many surgeons in Georgia who are **better** surgeons, and God knows that I hope they are going to have enough patriotism about them to stop making money for a little while and give the boys of Georgia the benefit of their skill. I also know doctors in Georgia who are, I think, better internists than the internists in the base hospitals on the border—and I hope that their patriotism and health will be strong enough for them to stand the rigorous experience of a few months' sojourn in a camp or hospital with sick Georgia troops. But these army medical men, one and all, are thoroughly drilled in field care and sanitation of troops. They are posted in it from the ground up—as a matter of fact, six feet into the ground (the depth of an army latrine).

Now I imagine that all doctors who are accepted into the service will be made to study and take courses in field sanitation, and the more we can learn about it ahead of time the fewer deaths will we have and

the fewer cases will be sent back to the base hospitals.

I have read so much about the great war—and have thought so much of it, that it is possible that it has become an obsession to me. It may be that I am unnecessarily alarmed—and I hope I am. But at present I firmly believe that when we are suddenly called upon to furnish from 140 to 400 **FIRST-CLASS** doctors, surgeons, internists and sanitarians to give up making money in Georgia to work with young conscripted Georgia soldiers, that the government had better get busy and find some way to conscript the doctors also.

I am tired of men, that is Doctors, saying, "I am willing to do all I can, but I can not leave my home town"; they never seem to realize that we are at war and that the soldiers themselves are not so very anxious to leave their home towns, either. Again, I am tired of hearing Doctors say, "No, I am not going to offer yet. I am going to wait a while and see if I am really needed. I would not mind going if I thought they really needed me."

God knows that a man can die just as well from poor treatment or over-treatment in pneumonia as he can from lack of treatment with a bullet wound in his abdomen. The government—and that means our country—needs the very best Doctors in the whole United States—and it is getting some of them in the Middle West and in the East. I trust that our successful Doctors in Georgia are going to come to in time, and that time is **NOW**.

In the future I should certainly hate for my son to ask me the question, which I understand was posted all over England, "Daddy, what did you do in the great war?" and have to answer him, "I stayed at home, son, and made money and let the younger, less well-informed Doctors do all the work."

I hate to offend any one in this State Association, but I wish every man to realize that the necessity is surely coming for good men, the very best men in the state. We all know who they are without embarrassing them by calling out their names. We want the Packard class. We can get and are getting plenty of the Ford class.

I close as I began, this is to be **war**, and it will be no child's play, and we men who are already in the service are not hunting for Doctors to learn medicine and surgery

on our troops. We think that they are entitled to the very best in the state, and we wish men who already are masters in their lines, men who we can absolutely trust to do their work QUICKLY, thoroughly and well.

DISCUSSION OF DR. HARROLD'S PAPER.

Dr. W. C. Lyle: Mr. President. We have with us this afternoon Major Jungmann, of the regular army, and I would like to ask the unanimous consent of the Association to yield my time and the privileges of the floor to Major Jungmann, that he may discuss this paper of Dr. Harrold.

Major Jungmann: Mr. President and Gentlemen: I thank you for the courtesy extended to me, and I also wish to thank Dr. Harrold for the very excellent paper which he has read to you. He has covered the subject more fully than I could ever hope to do.

I have been on duty in this state for the past six weeks, instructing the senior students at the Medical School in Atlanta, and am on duty here now at the Medical School in Augusta. I have also been detailed on the preparedness movement, instructing the Doctors of the state in the Medical Reserve Corps. I am sorry to say that my success thus far has been very mediocre. There is lots of patriotism in the state, and they seem to see the necessity for preparedness, but they are nearly all inclined to "let George do it."

Dr. Harrold has brought out the points very nicely and very clearly. We need men, and we are going to have them. If the men do not volunteer their service, do not take their examination and are accepted, they will be conscripted. That will naturally follow. Our soldiers must be provided with medical attendance, and not only that, we need men trained for duty as military surgeons. The duties are different. Then these men must learn military methods, and this can not be learned in a course of four or five weeks in a medical school; it must be learned on the field. The medical department has for years advocated preparedness. In fact, the Surgeon-General of the Army only in 1908 succeeded in getting congress to pass an act establishing the Medical Reserve Corps, which was the first official preparedness act in this country. During that time

there have been issued over 2,000 commissions to medical men throughout the country as Reserve Corps officers. A great many of these Reserve Corps officers have taken an interest in the work, have attended our summer camps, have taken correspondence courses. A large majority of them, however, have been content to be on the inactive list, and, as Colonel Hofft has expressed it, they well deserve the name inactive.

We are now at war. Georgia's quota of troops I understand is to be 20,000. This is not official—I am not speaking officially. I am speaking in my capacity as physician in your midst now. The proportion of medical officers required is, I think, 200 per million of population. I understand Georgia has about two millions, so your quota would be 400 medical officers. This matter has been taken up by the Council on National Defense, and the work laid out by auxiliary committees. You have had such a committee appointed here, and I understand they have appointed local committees to take up the necessary work along the line of medical preparedness. I do not wish to speak of that subject now.

But taking up the question of troops, the medical personnel to be furnished for your quota, the requirements are, under the National Defense act of last year, seven medical officers per thousand of enlisted strength. These are barely sufficient for the needs of the troops and for the extra duties at base hospitals and as sanitary inspectors. I understand that for the army which it is contemplated they will raise within the next year, 11,000 medical officers will be needed. Of that, seven per thousand will be for duty with the troops; three per thousand for the Red Cross units, and the other one thousand is for the casualties which are bound to take place in the medical personnel, so that if Georgia is to furnish 20,000 troops she will need 220 medical officers.

I wish to reiterate what the Doctor has said, that it is not the quantity, it is the quality. In my work around the state I have talked to a good many medical men, who have all admitted the necessity for preparedness, and lots of them were doing yeoman's work in trying to persuade some of the younger men to join. We want young men for the work in the field; we also want young men who are qualified for work. We do not want men just fresh from medical

schools on the field to learn their profession at the expense of your sons and relatives.

Colonel Page, whom I think many of you know, in a recent article summed up the situation very nicely. I just received his article today. It has struck me as being most appropriate, and I will close my discussion with this:

"The acid test of democracy comes when duty calls—and today duty does call every free man on the face of the globe. If the fruits of democracy are selfishness and individualism, we shall not stand the acid test; but if altruism and duty move us, the United States need have no fear for the future."

Dr. E. C. Davis (Atlanta): I think this is the most important paper that will be presented at this meeting. I can not improve on anything Major Harrold has said. In fact, he said exactly what should have been said, and I feel that what he has done is going to redound to the benefit of our state, creating enthusiasm throughout the state that certainly has not previously existed. No state in the Union needs waking up along the lines he has outlined more than Georgia; no state seems to be farther behind in being aroused, for some reason, either that we are self-satisfied, or that we do not realize the danger to which we are exposed, or that we do not feel the responsibility of the duty we owe. I feel that material such as has been brought to us in this magnificent and inspiring manner ought to be given to us regularly. I want to commend everything he said. We want the very best in the state that can be given, and we want those that we send to the front to be given the best possible attention. I feel that each of us ought to feel it his duty to give to the state whatever he has that the country demands. Whether or not those who are connected with teaching institutions ought to yield that privilege and go out, in a measure crippling the institutions with which they are connected, I do not know. Personally, I feel that if the country feels it needs my services, I am at its disposal and perfectly willing to go at any time and serve in any capacity I can.

Dr. C. C. Harrold (Macon): Just one or two things. This paper, of course, was written several days ago. The last twenty-four hours have seen a good deal. Dr. Crile, who has spent a good deal of time in this work

and is spending a good deal of time in Washington, has told me a number of things I did not know before. Among other things, the base hospital in Georgia will not exist. That was left too long. They have already enough base hospitals for a million men, and as a result we will have missionary hospitals in Georgia. We slept too long. They will send us missionary hospitals to come down here and take care of our men. I do not know whether it will be from Ohio, Boston, Maine, Vermont, or God knows where; but we have slept too long.

I hope when we get men that we will get men in special lines as well as men fairly well-posted in medicine and surgery.

EXOPHTHALMIC GOITER: WITH SPECIAL REFERENCE TO ETIOLOGY AND ROENTGEN RAY TREATMENT.*

W. A. Cole, M.D., Savannah, Georgia.

Judging from the immense volume of literature upon this disease one concludes that much remains for us to learn about it before we can successfully treat all cases of exophthalmic goiter. Certainly we can not place all cases under one heading, etiology, for we see apparently identical clinical cases springing from widely separated points of disturbance; hence, we must admit that the etiology of Graves' Disease still remains more or less obscure.

Two main theories have been advanced as to its etiology, i. e., the glandular theory and the neurogenic theory. The glandular theory, first advanced by Moibus, is perhaps the most generally accepted. Moibus attributes the symptoms common to Graves' Disease to abnormal production of substances in the thyroid gland or to improper destruction of such substances by the gland. Kendall, of the Mayo Clinic, reported the isolation of a crystalline compound containing 60 per cent iodine from the thyroid in 1914 and mentioned the successful use of it in the treatment of several cretins. He reports further (Kendall 9) in October, 1916, that this substance alone apparently causes the manifestations of the entire thyroid

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gland. Given in very small amounts it will relieve myxedema and cretinism and in excess will cause symptoms simulating exophthalmic goiter. However, it appears to have no action on the pulse nor blood pressure unless amino acids are ingested or injected simultaneously, when the pulse rate is enormously affected and even death may result due to the apparently great increase in metabolism going on in the animal. Many writers now consider it probable that abnormalities of the endocrine glands, such as the thymus, ovaries, pituitary and suprarenals, play a more or less important part in the etiology of the disease. Disturbances of the internal secretion of the ovaries play a part in some cases of Basedow's Disease, but whether it is the primary cause or is influenced by a previous disturbance of one of the other glands of internal secretion, it is hard to state. Nordmann (1) found that when the thymus is hyperfunctioning it is likely to cause exophthalmic goiter or aggravate the symptoms of the disease. Klose (2) and Simonds (3) also of Germany, Rose (4) of France, Halstead (5) of Baltimore, and other prominent men speak of the frequency of an enlarged and persistent thymus in exophthalmic goiter, some reporting as high as 90 per cent or 95 per cent of cases, while Klose (6) goes so far as to say exophthalmic goiter never occurs without enlarged thymus.

The neurogenic theory is complementary to the glandular theory and there is still difference of opinion as to whether the glandular or the neurogenous disturbance is the primary one. That the disease is not a pure hyperthyroidism is indicated by the fact that feeding thyroid substance, both experimentally and to man, does not always produce the typical symptoms. That it does sometimes indicates that it is probably dependent upon some predisposing factor and our present knowledge leads to the belief that this factor may be formed in the central nervous system. This hypothesis is strengthened by the predominance of symptoms referable to the nervous system; also by the frequency of the disease in families of neuropathic heredity, as demonstrated by various members of the family showing besides Graves' Disease, epilepsy, hysteria, or even insanity. According to Bumsted (7), direct inheritance of the disease is not so infrequent as is usually supposed. He men-

tions Oesterreicher's case in which out of a family of ten children eight had it and Rosenburg's case, in which the patient's father, grandmother, two sisters and two aunts all had it. Of four sisters under his care three had it and the fourth developed symptoms later after coming home from school and living with her sisters. I have a case in which a mother and daughter both have the disease. McCarrison obtained good results from vaccines prepared from organisms isolated from endemic goiter which suggests the possibility that the enlargement of the thyroid in exophthalmic goiter may be due to infection. Leneiz (14) reports three cases of typical exophthalmic goiter developing in two army officers and a private after being thrown from a horse or falling from a wagon. Each had fallen on his head and after intervals of one to three months symptoms of hyperthyroidism developed more or less pronounced. He has encountered a number of other cases in which trauma has been followed by symptoms suggesting a tendency to hyperthyroidism consecutive to injury of the head. The exophthalmos was never pronounced in any of these cases, but the expression of the eyes was peculiar. The frequency of pigmentation of the skin suggests the possibility of adrenal influence, while the greater frequency of the disease in women, especially in conjunction with the well known predisposition to the disease during menstruation and pregnancy points to ovarian influence. Mannaberg even goes so far as to treat exophthalmic goiter by roentgenization of the ovaries only in one series of cases, and helped most of his patients. In three cases after treating the ovaries, he rayed the thyroid. Two of these were apparently made worse, but the third improved. He advises treatment over the ovaries and the goiter and preferably the ovaries should be treated some time after the goiter treatment.

Mayo (15) speaks of a type of degeneration of simple goiter that occurs after many years that produces symptoms not unlike the worst features of exophthalmic goiter, i. e., myocarditis, degeneration of nerves, nephritis and general toxemia. He says such cases are more fatal than the average exophthalmic goiter and the degeneration being terminal, they do not respond as readily to treatment as does Graves' Disease. These cases are probably the ones that do not respond to

X-ray therapy, i. e., it is mistaken diagnosis in that a degenerated simple goiter is taken for exophthalmic goiter, and as Mayo further says, even the best diagnosticians are frequently mistaken in the diagnosis. In my series I did not meet any of this type.

The more closely cells approach the embryonal type and the more highly specialized they are the more easily are they affected by roentgen rays. Therefore, in consideration of the pathologic histogenesis of the thyroid and thymus in Graves' Disease, we may readily see that roentgen therapy is well worth adoption in the treatment of this disease. This has been well proven by the large number of cases successfully treated in America and abroad by thoroughly reliable men. Kienbach (10) and Nagelschmidt (11), and others go so far as to say that no operation for exophthalmic goiter should be undertaken without preliminary treatment by X-rays and that if this procedure were universally adopted it would be likely to reduce materially the operative mortality of the disease.

The reports of Mayo (15) and of Judd and Pemberton (16), give an immediate operative mortality of 3 per cent. Their original operative mortality was about 20 to 25 per cent, and this probably more nearly represents that of the occasional operator.

Ludin collected 208 articles on this subject and most of these authors agree that roentgen rays have a favorable effect upon Grave's Disease. He found that usually the longer the duration of the symptoms the more treatment was necessary to effect a cure. Mayo (15) reports that about four or five per cent of cases are operated upon after the degeneration of the essential organs of the body has become permanent and there is little hope of improvement, but the progress of the disease has been checked; the same may be said of roentgen therapy. Stoner treated by roentgenization 41 cases with only one failure. Stegman reported three complete cures and suggests that the rays may produce a change in the epithelium of the thyroid which would change quantitatively and qualitatively its secretion. Hooten (12) reported 31 cases, 14 private and 17 hospital patients. He showed 80 per cent cured or greatly relieved. Four of his hospital cases showed no improvement and one was operated on with fatal results after five doses had been given.

The technic has only within the last few years been reduced to a scientific basis, hence conclusions reached on statistics previous to that are sadly at variance, and give us nothing by which we could accurately judge future results. However, even with that imperfect technic all writers are favorable to roentgen treatment and authors of the last year or two are much more so.

My results in the treatment of twelve cases show no complete failures. On the contrary, I have come from experience to expect the following results: Reduction in the pulse rate, and this will serve as the best guide as to when we should discontinue treatment. The advice of Beclere may well be followed; he notes the frequency of the pulse when patient is supine, its stability by the amount of increase when patient sits up suddenly. When there is little or no change of frequency after this change of position the treatment may be discontinued, even though there is little or no change in the exophthalmos or in the size of the goiter. Next to improvement in the pulse is an increase in weight, these patients usually being under weight. Then insomnia, headache, tremors, excitability and uncontrollable temper generally respond early to treatment. Fortunately in the majority of cases it is not the goiter itself that gives rise to alarming symptoms. This is a late manifestation to improve, though in a majority of cases some loosening in the size of the gland will be noted. It will be seen that my results correspond in large measure to those reported by Pfahler and Zulick (13).

As with all other diseases and with other methods of treatment the technic vary to suit each case, depending upon the duration of the disease, its severity, age of patient and any special features of the individual case. Rarely after the initial treatment the symptoms appear worse; therefore, unless for special reasons the first dose should be small, i. e., about half full dose or less. About two weeks later regular treatment should begin. Certainly since it has been proven that in from 50 per cent to 90 per cent of cases of exophthalmic goiter the thymus is enlarged and as most men believe it is always instrumental more or less in the production of the disease, it should receive treatment also. It has been well proven that the effect of X-rays upon the thymus is prompt and decisive. Generally, I treat the thymus through

two areas, one on either side of the median line, including the first, second and third interspaces anteriorly. The thyroid is usually divided into six or eight fields. It is best to keep just below the erythema dose because of the possibility of causing changes in the vessels of the skin. The dose should be carefully measured and my results have been best by giving tint. 4.5 B Sabouraud. I use a Coolidge tube and transformer current of five milliamperes, backing up a nine and one-half-inch spark gap, with three millimeters of aluminum and one thickness of sole leathers as filters. The series of doses should not be repeated within three or four weeks and after improvement begins the intervals should be lengthened to prevent the possibility of hypothyroidism or cachexia strumipriva.

Patients under X-ray treatment for exophthalmic goiter should be properly advised as to avoidance of excitement, to changes of diet when necessary, increased rest, regular hours and any other measures that may accelerate a cure. They should also be treated for the anemia which is usually present.

A few case histories will be mentioned as examples:

Case 1. Mrs. D., age 32. Previous history has no bearing on case. When brought to me she had marked exophthalmos, tachycardia, moderate tumor, marked tremor and other nervous symptoms and edema of extremities and under eyes. She had lost 32 pounds and was unable to do any part of her household duties. Medical treatment had failed and surgery was considered, but she was an extremely poor surgical risk, so was turned over to the roentgen department. She was given eight series of X-ray treatments at three weeks' intervals, and in addition the Oudan high-frequency current over the region of the thyroid and thymus during the interval between the first and second series. All of her symptoms rapidly subsided except the exophthalmos, which I noted a few days ago has also materially reduced after a long time. She gained forty-six pounds and does all of her housework with ease.

Case 2. Mr. M., age 41. About one year previous to coming to me he was operated upon for exophthalmic goiter, following a long rest cure. He improved for a time following the operation, but later he relapsed and was worse than before. All other meth-

ods of treatment were in vain, and he was told that there was nothing more to be done for him. A surgeon was then called and he advised the patient to have X-ray treatment. I gave him six series of treatments and dismissed him as cured. He writes me now that he has never felt better and is working every day.

Case 3. Mrs. S. Exophthalmic goiter complicated by pregnancy. Operation contemplated, but because of pregnancy deferred and X-ray treatment suggested as a palliative until delivered. All symptoms improved and patient was delivered without much trouble. She then decided that she did not need an operation, as she was enjoying perfect health. Very recently her family physician reported to me that occasionally she has a little heart flutter, so that probably she may need a few more exposures.

As compared with the best that surgery has to offer, as shown by reports from the Mayo Clinic (15) and (16), the results appear to be in favor of X-ray treatment.

The advantages offered by roentgen treatment are that there are no fatalities and no resulting scar. It is painless and does not interfere with the patient's occupation. Many patients will submit to it who would refuse surgical intervention. If unsuccessful an operation may be done with less risk because of the favorable action of the X-rays upon the thymus gland. Conclusions: Roentgen treatment is well worth universal adoption by those who are familiar with the possibilities, limitations and dangers of roentgen therapy. The dose should be accurately measured and properly timed as to repetition. Under this treatment there is practically always a decrease in pulse-rate and an increase in weight with rapid improvement in the nervous phenomena. The goiter and the exophthalmos are the last symptoms to show improvement and many times show no change.

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DISCUSSION OF DR. COLE'S PAPER.

Dr. George R. White (Savannah): I think this is a very timely paper. We have been told that exophthalmic goiter is a complex disease, and the thyroid is not the cause of the disease; the cause is somewhere else, and the thyroid is the innocent victim to a certain extent. That being the case, it seems to me an illogical procedure to attack the thyroid gland just for the sake of a surgical operation. In the use of the X-ray we have an adequate agent for dealing with this condition that we have in the thyroid gland. It is a rule with the X-ray that an exposure by X-ray will reduce all the secretions of the parenchymatous organs. This is true of the thyroid gland, that you can stop the secretions of the gland or control it to a certain extent. By doing that you can get the results you want. I have seen Dr. Cole's work and I know what he is doing. I have seen results with which many of you are familiar. One of the first cases he had was a young woman who was bedridden a great deal of the time and who became pregnant. He took charge of her and she began to improve right along. I saw her two months after the baby was born and she ran upstairs and brought it down to show me. Another case was a man that had been bedridden most of the time, who had been before clinics and had gotten no relief. He lost his job, he was poor, and gave the picture of a man who was down and out. I saw him three months after Dr. Cole got hold of him and he had his job back and he had lost the down and out look. But there must be a word of warning. These little machines are not adequate for the work and anybody

who tries to treat an exophthalmic goiter with a small machine will have failures and make their patients worse. With the big machines you have a most dangerous apparatus. You can turn on that big machine with the Coolidge tube and burn the tissue to the bone and the patient will not know it until later. But it is a reliable means in the hands of a skillful man. I believe that with the men skilled in that work in the University that we are not justified in recommending surgical operations for exophthalmic goiter until the X-ray has been given a trial, and if we do that, we will find that these cases to be operated will diminish very much.

SYPHILIS OF THE NERVOUS SYSTEM AND ITS TREATMENT.*

James N. Brawner, M.D., Atlanta, Ga

Our ideas concerning syphilis, especially the later stages of the disease, have been revolutionized by the work of three men: Schaudinn, who, in 1905, discovered the *spirochaeta pallida*; Wassermann, who worked out the complement-fixation test, known by his name for diagnostic purposes; and Ehrlich, who, in 1909, discovered salvarsan, used for the destruction of spirochetes in the living body by means of chemical action, thus introducing, on a sound basis, chemo-therapy. These men did the pioneer work which has led to a thorough understanding of this prevalent disease. The works of these men, and their followers, are well known, and I will not consume time in discussing this phase of the subject.

Syphilis is more prevalent than is generally supposed. The more frequently Wassermann reactions are made on supposedly healthy individuals, the oftener we find that they are suffering from syphilis, and in many cases, where a negative reaction is found, syphilis, in a latent stage, is present. In these cases of syphilis, where a negative Wassermann is found, spirochetes exist in limited numbers in more or less circumscribed areas or portions of the body, and may cause but few, if any, symptoms. We should never forget that in a large proportion of

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cases where the luetic process is more or less circumscribed and limited, the blood of the patient will show a negative reaction, and in many cases of syphilis of the nervous system, where the blood is negative, the spinal fluid will be found to be positive. In general paresis, where the disease process is fairly extensive, a negative reaction in the blood is occasionally met with; in fact, two such cases have come under my observation during the past month, though in both of these cases, while the blood was negative, the spinal fluid was four plus positive. Nor must we forget that a negative reaction of the spinal fluid does not rule out syphilis of the nervous system. A patient may have a gumma of the brain or spinal cord, causing severe pressure symptoms, yet showing a negative reaction in both blood and spinal fluid. When we take into consideration the nature of syphilis, that the disease process is frequently localized and limited to small areas, and the amount of luetic antigens thrown out into the general circulation being small, we see why so many of these patients give negative reactions to the Wassermann test. The blood and lymphatic circulation about a gumma, for instance, is frequently poor, allowing but a small amount of the antigens formed by the spirochetes to be absorbed into the general circulation or the spinal fluid, rendering the complement-fixation test negative. In the examination of patients this fact should be ever borne in mind.

To my mind a four plus Wassermann means the activity of a large number of spirochetes, so situated that the antigens are thrown regularly into the lymphatic and blood channels, and, other things being equal, it is probable that a one, two and three plus Wassermann reaction accompanies those conditions where the spirochetes are not so numerous and are more or less circumscribed in location. When the spirochetes are encysted or few in number it is reasonable to suppose that we will find a negative reaction in both the blood and spinal fluid. We thus see that a negative reaction does not mean the absence of syphilis, and in such patients where the spirochetes are present, however small their number, there is always the risk of a more extensive invasion of the body and the development of severe symptoms.

Localization of Lesions.—It is probable that syphilis produces more organic degenerative diseases of the nervous system than all other causes combined, excepting arteriosclerotic changes in senility. Syphilitic lesions may be limited to very small areas in the nerve structures, walls of the blood vessels, or of the meninges; or the lesions may be widespread, producing a diffused syphilitic encephalitis, as in general paresis; or there may be a diffused syphilitic meningitis, with, or without gumma; or the syphilitic process may be limited almost entirely to the blood vessels.

Clinically the most useful classification of syphilis of the nervous system and syphilis of somatic organs, producing nervous symptoms, is as follows:

(1) Parenchymatous syphilis of the brain and cord, as is found in general paresis, and gummatous conditions involving the parenchyma of the brain and cord. Spirochetes have been found in the cerebral cortex in general paresis (Noguchi and Moore); in the spinal cord and ganglia in tabes; and in gummatous infiltrations of other lesions of the brain and cord. It is probable that certain strains of spirochetes have an elective localization in the disease process.

(2) Luetic meningitis which may be sharply localized or diffused, and may exist with or without gumma formation. Gummatous meningitis usually involves more extensively the base of the brain, and frequently causes paralysis of the cranial nerves, with symptoms of increased intracranial pressure.

(3) Syphilitic arteritis of the brain and cord, accompanied by thickening of the walls of the blood vessels and narrowing or closure of the lumen. Accompanying this condition we usually find patches of softening, single or multiple and varying in size, the symptoms depending on the location of such areas. In syphilitic arteritis there is nearly always a choking of the perivascular lymph spaces with lymphocytes and debris, impeding the lymphatic circulation and causing localized edema of certain areas of the cortex. In syphilis of the brain convulsions are frequently due to a sudden clogging of the perivascular lymph spaces, resulting in a rapidly developing edema of the cortex, causing molecular explosions in the nerve cells.

(4) Syphilis involving the ganglia or fibers of the sympathetic or autonomic nervous system is frequently the cause of nervous symptoms. Lesions of the semilunar ganglia, or their fibers, will cause a host of symptoms, referable principally to the heart, stomach, or intestines, and some of the so-called gastric neuroses are due to lesions of these structures. Very small syphilitic lesions in the ganglia of the autonomic nervous system may produce widespread reflex disturbances, and cause all of the symptoms of a neurasthenia. To show how frequently the autonomic system is involved in syphilis it is only necessary to mention the Argyll-Robertson pupil, which is found only in syphilis (except in very rare cases where it is due to alcoholism). When we take into consideration the frequency of the involvement in syphilis of the sympathetic nerves supplying the iris, it is reasonable to suppose that the ganglia and fibers supplying the heart, stomach, intestines, blood vessels and genitourinary organs are just as frequently involved, but the signs of their involvement are not so easily observed, and frequently go unrecognized, and the patient's condition is diagnosed as neurasthenia, psychasthenia, general invalidism, and various other indefinite terms that happen to suit the whims of the physician.

(5) Syphilis may involve the glands of internal secretion (endocrine glands), directly or more frequently indirectly, through involvement of the sympathetic nervous system, producing reflexly a disturbance in their secretions. In hereditary syphilis spirochetes are always found in the liver (Levaditi) and frequently in the adrenals, pancreas, thymus, pituitary body, pineal and thyroid glands which not only cause a direct destruction of the glandular elements, but in cases where the spirochetes are finally destroyed there remains sclerotic processes in the gland substance followed by glandular insufficiency. We thus see that we may have an innumerable number of symptoms, somatic, nervous and mental, due to syphilitic involvement of the endocrine glands or of the autonomic ganglia supplying them.

The general symptoms and pathological findings of cerebro-spinal syphilis are too well known for further discussion, but there are many cases of syphilis of the brain, involving especially the small arterioles or

with the formation of a small gumma in certain areas which produce clinical symptoms out of all proportion to the extent of the lesion. Take, for instance, a small gumma involving the optic thalamus. In addition to the changes in the visual realm, and possibly some slight disturbance in sensation or hearing, the patient fails to react properly in an **emotional** way to stimuli. In other words, he will become emotionally excited over ordinary events that have no effect on a normal individual. These abnormal emotional excitations cause, after a time, hypersecretion of the thyroid gland and in turn we have all the symptoms accompanying a hyperthyroidism.

Cannon, through a large series of experiments on animals and human beings, has shown that on emotional excitation, such as fear and rage, there is an outpouring of the secretions of the thyroid and adrenals, with an increased amount of sugar in the blood. Crile and Cannon have shown that this is a physiological process, developed in such a way that it tends to the survival of the individual in the struggle for existence. We thus see that a small focal lesion in a limited area of the nervous system, so situated that it gives an abnormal emotional reaction to stimuli, will, after a time, produce all the symptoms of hyperthyroidism, and finally organic changes in the thyroid glands and other structures.

A destructive luetic lesion of the pineal gland may cause an overfunction of the gonads (sex glands), producing the syndrome of hypergenitalism. If this occurs before puberty or even in young children a remarkable premature development of the sexual organs and secondary sexual characters may occur (Pubertas precox). An irritative luetic lesion of the testicles or ovaries may also cause hypergenitalism, though destructive lesions of the gonads, especially in early life, will produce symptoms of hypogenitalism. Multiglandular syndromes are frequent in chronic syphilis. Only one gland or only the autonomic nervous system may be directly involved, but the other glands are indirectly affected, causing a general imbalance in the internal secretory functions.

No doubt many developmental anomalies are due to hereditary lues. I have seen many such cases myself. And we must remember that in many cases of hereditary syphilis the patient gets well of the actual infection

—his tissues finally kill out the spirochetes—but the scars, so to speak, remain, and if they involve certain nerve structures or ganglia in the autonomic system, or endocrine glands, developmental defects occur which may show themselves in either the bodily or psychic realm. Many of these patients become chronic invalids; others may develop dementia precox, manic—depressive insanity, compulsion neurosis, hysteria, psychasthenia, neurasthenia or just nervousness.

Treatment.

In the treatment of syphilis the real object is (1) the destruction of spirochetes in such a manner as not to injure the tissues of the patient; and (2) in the case of gumma formation, to administer remedies to help in their absorption. As spirochetocides mercury and some of the organic compounds of arsenic, especially salvarsan, are pre-eminent. For the absorption of gummatous deposits the iodides are the best of known remedies.

In this paper I have discussed chronic syphilis of the nervous system, and it is the treatment of this condition that I call attention, and I will illustrate it by giving the histories of the treatments of four patients.

Case 1. Mr. C. W. J. Diagnosis syphilitic spastic paraplegia. Condition has been developing four or five years. Marked spastic gait, marked ankle clonus, patient barely able to walk. Loss of sexual power for one year. Four plus Wassermann. During the first four weeks of treatment he received .4 gm. salvarsan intravenously every seven days; also one-twelfth gr. biniodid of mercury by mouth. During the next three months he received two doses of salvarsan every four weeks. The biniodid was also given, but not continuously. At the end of one year patient was much improved. During the second year of treatment patient received eight doses of salvarsan and during the third year six doses. So during the past three years he has received thirty-three doses of salvarsan in addition to the biniodid of mercury. The patient is still improving. He has returned to work, can walk well, spastic gait hardly noticeable, ankle clonus gone, sexual power has returned and is now about normal.

The important thing in the treatment of this case has been the persistence of the salvarsan treatment. In chronic syphilis one, two, or three doses of salvarsan do not destroy all of the invading spirochetes, many of which are encysted in tissues poorly supplied with blood vessels, but by the persistence of the treatment more and more of the invading germs are killed and, of course, better results are obtained.

Case 2. A. J. C. Boy of 5 years of age, showing a Binet mental test of one year. Four plus Wassermann. Diagnosis: Idiocy due to hereditary lues. I have now been treating this boy regularly for two years with mercurial inunctions and mercury biniodid by mouth. He has not taken any of the iodides. Patient has improved remarkably and is still getting better. He now shows a Binet mental test of 5 years, though his actual age is now 7.

Case 3. J. G. B. Man, age 45, railroad conductor. Suffered from persistent occipital headache, vomiting, mental dullness and loss of memory. Choked discs were found. Pupils irregular. Wassermann not made. Admitted syphilis. Diagnosis: Gumma of brain. Mercury biniodid and potassium iodid by mouth, also mercurial inunctions. I treated this man for three years and today, seven years since I started treatment, he is clinically well.

Case 4. Mrs. J. G. B. Wife of case No. 3. For several years had been an invalid suffering from nervousness, neurasthenia, indigestion, etc. Has been the rounds seeing stomach and nerve specialists and giving part of her time to osteopaths. Knowing her husband's condition I put her on antiluetic treatment and she gained thirty pounds in two months. I treated her for three years and she is still well.

We can cure many cases of a nervous indigestion by administering spirochetocides.

I have now treated about twenty cases of general paresis by the Swift and Ellis method of intraspinal injection of salvarsanized serum. One of these patients I treated three years ago. He is now at work, though he still has the physical sign of the disease, together with some mental dullness. Most of the other cases were benefited, though many have relapsed and some have died.

It seems that parenchymatous syphilis of the nervous system, such as paresis, is the most difficult of all forms to benefit by treatment. Though these cases are not hopeless in the early stages if the treatment is carried out intensively and over a long period of time.

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DISCUSSION OF SYPHILIS SYMPOSIUM.

Dr. J. M. Anderson, Columbus, Ga.: In the discussion of this subject I might say that it has happened that I was selected by the American Medical Association in 1917 as one of the six or eight men in Georgia to deliver talks before the lay public on public health. I selected as my subject three things—syphilis, tuberculosis and pellagra. I was really sorry after I had selected syphilis that I did, for this reason: I have been very much criticized by the members locally, being accused of being a therapeutic Nihilist. I deny that. The reason for this criticism is that I want to give people air instead of hot air; milk instead of medicine, and education instead of egotism. Of course, in the discussion of syphilis we can preach because this is one of the few diseases great many aids. And I did select this subject for this reason. It is a subject of intense general public interest. It is one of the most important subjects that confront us. My personal experience in the line of disease has been very varied and very severe. My troubles have always come in two's. In the first place, I had tuberculosis, then I had two attacks of typhoid fever, and then I had two operations for gallstones. However, I am a very poor public speaker and I do not know that I will be called upon to deliver any talks on public health, but if I am, I will continue to preach, not exactly therapeutic Nihilism, but preach that doctors quit giving medicine unless they expect results. If you have a patient who has to have medicine because he thinks he must have medicine, give him a little education instead of medicine, tell him that he does not need any medicine, tell him what to do, and he will be ten times better off. I do not mean to educate the general public to practice medicine, but it is a well known fact that even among the doctors of the United States we know **too much** medicine.

I would like to ask the man who read this paper to please answer this question. I have a laboratory man that I entirely depend on. I would like to know how you consider the making of a smear directly from the ulcer by scraping off the top surface and getting a little serum directly? I want to know if that can be relied on.

Dr. E. S. Osborne (Savannah): I notice that Dr. Brawner rightly states that a positive Wassermann does not exclude syphilis. In my opinion every patient who comes into a physician's office should have three things done to him: An examination of his pupillary reflexes, the knee jerk, and a test made for the Rhomberg. Of these procedures the pupillary reflex is unquestionably the most important. When we think of the very close connection that the eye has, not only with the central nervous system, but with the sympathetic nervous system, and its antagonistic the so-called autonomic nervous system, we can appreciate the importance of pupillary reflexes. You take even the small persistent pupil, a miosis; that is suspicious of syphilis. You take the sympathetic reflexes of the eye, which cause the pupil to dilate by irritation of the skin of the back of the neck and under the angle of the jaw, Bunce first noticed that this was indicative of incipient dementia precox. After that it was discovered that it was very often absent in cases of tabes and paresis. Another very important reflex and at times the first is the oculo cardiac reflex obtained by pressure on the eyeball. Of course, we are all familiar with the Argyle-Robertson pupil, and there are cases on record in which for a period of seven years this was the only sign of syphilitic involvement, but in these it was sufficient to establish a diagnosis. Of course, these cases were taken before the time that the Wassermann reaction was generally used. I was somewhat surprised at Dr. Gaines' report on the Noguchi investigation of the treatments with salvarsan. I was under the impression that they were using it now, not so often, possibly giving it every week or possibly two weeks, and giving mercury in the meanwhile. I think we should be very careful in telling our syphilitic patients that they are cured.

Dr. E. B. Block (Atlanta): I have felt more than usual interest in the subject of the treatment of syphilis by intraspinal in-

jection. It has been to me very imperative and of unusual interest. I want to state in the beginning that there is no doubt in my mind but that intraspinal treatment of syphilis is the most potent method of treatment which we have, and yet I want particularly to emphasize this fact, that we can not place entire reliance upon salvarsan given intraspinaly, as we need also other methods. When salvarsan was first brought out, it was supposed to cure the disease with one injection; a little later on it took two, and finally it took ten, and now they are saying it takes more, but how many more we do not know. Certainly, the best results have been obtained from the use of salvarsan, and to my mind giving it intravenously first and then taking the serum and giving it intraspinaly in the same patient. Nevertheless, it is imperative to give further germicides as well as arsenic. We find arsenic is valuable in treating plants and in treating people. Mercury given by inunction in large doses, and given every day, and twice a day in cerebro-spinal syphilis, is extremely valuable and more potent if aided by salvarsan. There is just this about the use of any germicide that will kill the spirochete, and that is first, you must get your antiseptic to the spirochete. There is no question but that it will kill the spirochete, but you must first get it. If every spirochete in the body were circulating in the blood stream, one dose of salvarsan would absolutely cure syphilis. The trouble is that they produce a protective barrier around the organism, which gives rise to the formation of gummata, and the only way you can soften this satisfactorily is by giving some of the iodides and by softening the tissues and liberating these germs into the blood stream, you then can give mercury and arsenic to kill them. The one thing is to give the patient enough mercury and enough arsenic to kill the germs, but not enough to kill the patient. This is to be determined by experience with individual patients. You can not lay down a hard and fast rule to give a patient a treatment every week. They will stand it for four or five weeks and then they begin to react very badly, and you must prolong the intervals to ten days or two weeks. But the discovery of salvarsan and its various methods of use have not in the least diminished the necessity for still giving mercury and iodide. Mercury to kill the germs, the iodide to

soften the tissues and liberate them into the blood where the salvarsan and mercury can get to them.

Dr. Stewart R. Roberts (Atlanta): We try to teach our students that in the South, at least, they should always suspect three diseases—syphilis, tuberculosis and hookworm. One does not diagnose what one does not suspect, and one does see what one does look for. In our private work we have attempted in the last year to make routine Wassermanns of every patient who presented himself for thorough physical examination and diagnostic study. Not only that, we have attempted to make three different Wassermanns of each patient. I do not mean any modification, or any Noguchi modification, which I understand Noguchi is not now so keen about, but the radical Wassermann reaction itself. We have been surprised at the large number of positive Wassermanns which we have found. We are now running between twenty-five and forty per cent positive Wassermanns in Southern citizens. We are attempting to keep a record of one thousand Wassermanns done in a series of records of private patients, which we later will be able to publish. We find that in the medical profession we have been brought up under many syphilitic errors, and one of these is that if a family of children is raised up which appear healthy and which go through the routine of life, that, therefore, that is proof per se that the father had no syphilis or the grandfather. Such is not the case. We have many families in which the father gives a high positive Wassermann, or the mother, or both, and the children all appear healthy. One family with nine children, two dead and seven living, and yet in this family several Wassermanns were positive. We have also found many families in which the grandfather had syphilis and in which the grandchild gives a positive Wassermann. By the old method of treating syphilis before the introduction of salvarsan we have found but one case in all our series which gave a safe negative Wassermann. Every case of syphilis treated in the old way with mercury and the iodide have, when we examined, given a positive Wassermann varying from one to four plus. So I think we are at least justified in assuming that the old method of treating syphilis, as a rule, did not cure it. No case of

syphilis is cured until every spirochete in the body is dead, and we have no proof that because the clinical symptoms have disappeared and because at the end of our treatment, or within a year, the Wassermann is negative, that within six months or two years or five years it will not return to positive. It is true that because the Wassermann is negative it does not mean that a man has no syphilis; it simply means that the test is negative; it may be negative in the blood and positive in the spinal fluid.

Dr. Lee Howard (closing): I would like to say in reply to Dr. Roberts' remarks that where he got his impression as to Dr. Noguchi not employing or thinking well of his own system, I do not know. I have heard of some criticism myself, and with that in view, when preparing this paper I wrote to Dr. Noguchi and also to Dr. Flexner, of the Rockefeller Institute. This system has been used in the Marine Hospital for three years and this splendid system of laboratory work certainly could not consistently use a system that is theoretically not the best. In a letter from Dr. Noguchi last week he indorses his system most highly and says it has been received and adopted by the New York State and City Boards of Health, and that it is being used not only in the army and navy, but in various clinics throughout the country. I think the idea that it is a different system from the Wassermann is where this erroneous opinion among clinicians arises. It is the same system with just some salient improvements, and not different in any of the fundamental principles at all. Dr. Roberts' information is certainly erroneous.

Dr. Allen H. Bunce (closing): In discussing Dr. Howard's paper, he is correct in stating that anything that simplifies a method and is just as accurate, is the thing we should adopt. However, the method he mentioned of sensitizing the human cells has been used quite extensively for a number of years. The Mayo Clinic used it in 1913, but some Frenchman is the man who introduced this method. There are disadvantages in sensitizing the cells; the especial one is using a definite known quantity of amboceptor, but this can be overcome by using a liquid amboceptor. I believe we can get more accurate results in this way. In reference to Dr. Roberts' discussion as to the system, it does not make any difference what system you

use, so it works all right. At the University of Illinois they use the chicken system and at others they use the cow system. The Wassermann test depends upon certain factors. It is not true that the original Wassermann is being used in any of the important clinics in America or in other countries. They use a system which seems to fit best. Nobody practically at all is doing the original Wassermann now.

Dr. Lewis M. Gaines (closing): There were several points brought out, but I can only mention two things. The first is a warning not to diagnose as syphilitic a disturbance in a patient with a positive Wassermann. The patient may have a positive Wassermann and have latent syphilis, but the disturbance for which he comes to you may be due to something else. I have one such case in mind, a woman with an embolism of the brain caused by a right-handed hemiplegia. She had a positive Wassermann, but I am satisfied that her hemiplegia was not due to latent syphilis.

The second point is to mention the very interesting contents of a letter which I received recently from Dr. Cotton, of Trenton, New Jersey, who has probably had more experience than any one in this room in the treatment of paresis by the use of these later methods. Dr. Cotton writes me that for several years he treated this disease by means of intraspinal therapy, using the different methods that Dr. Bunce mentioned, and he was encouraged when he could say that 32 per cent or more remained well for three years. However, for the last year and a half he has been using the ventricular injection. He makes an incision in the scalp under local anaesthesia, with an electric drill, and introduces a Cushing cannula into the ventricle and allows the cerebral fluid to escape. He injects one-half to one milligram of salvarsan, and with this method, which he says can be done in nine minutes, he has been able to get favorable results in thirty-eight per cent of cases. Now, in a disease such as paresis, in which mercury and the iodide do no good, anything which will offer any hope to these cases which are absolutely hopeless unless something is done—anything which will do them any good surely should be tried. So I feel that this is a method worthy of serious consideration. In regard to the use of iodides and mercury, I am satisfied that they should

not be used in paresis and tabes, so we have discontinued the use of m̄ercury and the iodides in these two diseases, but in other manifestations of nervous syphilis I think they are extremely valuable.

Dr. James N. Brawner (closing): Dr. Roberts mentioned syphilis under the third generation. I would state that about three years ago a man came to me with pollution who was deaf, and on investigation I found his father during the Civil War contracted syphilis. This syphilis was transmitted to his son because he stated very definitely that he had never contracted the disease, and he was an intelligent, honest fellow. He had two children and a Wassermann was made of these children by two different men, and they were found positive. I would state that that is the one case in my personal experience where I had direct evidence that syphilis was transmitted unto the third generation. Apparently, these children were healthy, except that they were delicate. A great many syphilitic children apparently are healthy, but delicate. In other words, they have no disease on which you can put your finger.

THE RELATION OF FOCAL INFECTIONS TO OCULAR DISEASES.*

Elton S. Osborne, M.D., Savannah, Georgia.

Up to a comparatively recent period far too many of the inflammatory changes in the eye and its appendages were classed as purely local infections; the ophthalmologist was prone to think of the eye as a separate entity and to confine treatment to too great an extent to the local condition; although usually the response was satisfactory, too often the case drags on, one treatment succeeding another for an indefinite period until the patience of both the physician and the patient would be all but exhausted.

It was not until comparatively recent years that it was established that various inflammatory conditions of the eye were caused by a blood borne infection from a septic source; it is of primary importance to locate the focus which is causing the trouble. There are numerous cases reported where conjunctivitis, ulcer of the cornea, iritis, although resisting all former treat-

ment, have cleared up when an abscessed tooth was extracted or appropriate treatment instituted for a pyorrhoea.

Lang, in a series of 10,000 cases of inflammation of the eye, attributed 215 to sepsis, of these he attributed 139 to pyorrhoea, 33 to gut infections, 20 to infections of male urethra, and 23 from other foci, including skin diseases, kidney and bladder affections, uterus and appendages, appendicitis, inflamed tonsil, nasal inflammations and sup-puration of the maxillary antrum.

Irons, in a series of 100 cases of iritis, found that 23 were due to syphilis, 18 to dental infections, 16 to tonsillar infections, 9 to gonococcal infections, 8 to tuberculosis, 3 to sinus infection, 17 to combined infections in which tonsil, dental, tuberculosis, gonococcal, and syphilitic infections shared almost equally.

Syphilis and tuberculosis undoubtedly play an important role in ocular inflammations and should be excluded by Wassermann tests and the subcutaneous injections of 1, 2 and 4 milligrams of O. T. tuberculin before the attempt is made to fix the responsibility on a septic source.

Dental infections are certainly the causative factor in many ocular inflammations, but we should not be too hasty in reaching this conclusion; infections about the teeth occur in a large percentage of all persons, and on account of the prevalence of dental infections care should be exercised in ascribing it as the causal factor. It is true that an alveolar abscess or a pyorrhoea may be latent, but it is equally true that they may act as a focus from which invading organisms may pass into the blood stream and produce lesions in the eye, joints and other organs. There can be no excuse for not making a thorough Roentgen ray examination of the mouth in all refractory or obscure cases. It is hard to conceive how any one who will examine the filthy fetid mouth of the usual pyorrhoeal case, the teeth incrustated with sores, the gums inflamed and pus-soaked, will not admit that this has a far-reaching effect on the whole organism.

We know that a closed suppurating cavity is a menace in any portion of the body; this is not questioned in any locality with the exception of the dental region, then why should we think that it is benign and harmless in the mouth? I have had under observation for the last year four cases of chronic conjunctivitis that have resisted every form

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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of treatment; all of these cases have pyorrhoea, and this is the only septic focus that can be found. I can not help but believe that if the pyorrhoea could be eradicated the eye symptoms would clear up. Some months ago I saw a man whose eye suddenly inflamed. It looked strikingly like a gonorrhoeal conjunctivitis. The tissues were greatly oedematous and there was a copious discharge of pus. The principal organism was a streptococcus; he had the previous history of frequent attacks of rheumatism and he then had an impediment in his gait from former attacks; five days later his left knee became acutely inflamed; it was greatly swollen and very painful. After this condition had persisted for two weeks or longer two carious tooth roots were extracted, showing apical abscesses. Both the eye and the knee improved rapidly, and there has been no recurrence to date.

It matters not whether a person is sick or well a pyorrhoeal condition should be cleaned up and kept as clean as possible. Practically all dental abscesses are associated with a carious tooth or with devitalized teeth in which the root canal has been treated or filled; in all obscure cases these should be regarded with a suspicion and a thorough Roentgen ray examination made; a periapical abscess in a living tooth can be eliminated as this can hardly occur. The indiscriminate pulling of teeth is unquestionably bad practice even when the Roentgen ray shows them to be suspicious; unless the case is urgent a conservative procedure should be instituted and the results of the treatment checked up by means of the Roentgen ray; oft-times the infection will be removed and the tooth saved.

Tonsillar infections have an important bearing as a causal factor in ocular inflammations and certainly act as a focus from which infective organisms pass into the blood stream and produce lesions in various organs; whenever the tonsil can be shown to be causing trouble of any gravity it should be removed, but a word of warning should be sounded against promiscuous tonsillectomies; at the Hopkins "It is the practice to regard the tonsil and adenoids in children as physiologically important parts of the mechanism which protects the lower air passages from dust and organisms." Parker states "That the size of the tonsil is of negative importance. A small submerged tonsil

with crypts covered over may be most dangerous. In recurrent tonsillitis the tonsils should be removed. Tonsils should be removed from tubercular children. Cheesy, foul-smelling crypts should be eradicated or good drainage established by splitting the crypts. Normal-looking tonsils may exude puss on pressure. Ragged, spongy tonsils are nearly always infective."

Repeated tonsillar inflammations or the chronic enlargement of the regional lymph glands or the association of arthritis should lead us to suspect the tonsil.

Chronic gonorrhoeal infection of the urethra, prostate, seminal vesicles, or other pelvic structures frequently act as a focus from which invading gonococci pass into the blood stream and produce the metastatic lesions of the eye including metastatic gonorrhoeal conjunctivitis, keratitis, iritis, irido-cyclitis, and inflammations of the optic nerve and retina; gonococci have been cultivated from the blood, from the aqueous humor and from the conjunctival discharge in metastatic inflammations of the eye. The importance of gonorrhoea as a causal factor can be appreciated when we consider the widespread prevalence of gonorrhoea and from the fact that gonococci have been found in the centrifugalized urine thirty years after the primary infection. The mere finding of a focus of gonococci in the pelvis or a positive complement fixation test does not alone prove that the ocular inflammation is a metastatic gonorrhoeal infection; all factors in the case have to be considered, the presence or absence of arthritis, the effect on the ocular inflammation of the exacerbations and remissions of urethritis, inflammations of the prostate and other pelvic contents, also the presence or absence of the foci of infection.

The stomach and gut as a causative factor in ocular inflammations is a mooted question. Recent research would seem to indicate that ulcer of the stomach, cholecystitis and appendicitis were usually blood borne infections, but under certain conditions of stasis and lowered vitality, with the intestinal tract converted into a living culture tube, there is no reason why the organisms of the intestines should not infect the contiguous tissues and adjoining structures and organs and finally find their way into the blood stream and lymph channels establishing secondary foci in distant organs.

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X-RAY THERAPEUTICS; REPORT OF CASES.*

T. Byron King, M.D., Sandersville, Georgia.

Gentlemen, in presenting this paper I have not so much in mind the few men who are especially interested in the X-ray and who have kept up with its development, but rather is it my purpose that the larger number of the profession get a somewhat more comprehensive view so that they may determine with a greater degree of satisfaction what may be expected from roentgen therapy.

A few years after the discovery of the X-ray by Roentgen in 1895 a large number of machines were on the market and they were scattered near and far throughout the country. This was an entirely new agent not foreshadowed by anything that had gone before, and when a few beneficial results were claimed from its use it was heralded as of

great curative value. Though by no means universal, quite a considerable number of men of the profession believed that death from malignancy was to be a thing of the past, and that the surgeon's knife would no longer be needed to cope with this dread malady. But, alas, for the hope of man. Like the grass of the field, "In the morning it springeth up and flourisheth, and in the evening it is cut down and withereth." Many almost worthless machines were installed and some good machines fell into the hands of men who knew absolutely nothing of their operation. Those who had expected too much were disappointed, and the many discarded machines not replaced by new ones bear witness to the, may I say, disfavor into which they fell.

Within the last few years manufacturers have made wonderful improvement in X-ray apparatus. The present so-called transformer type is so much better than any other that have been previously manufactured they are hardly to be compared. Transformers are dependable, capable of delivering an almost unlimited amount of current, and yet of great flexibility. Since their advent great

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strides have been made in X-ray work from a diagnostic standpoint. But therapy, while not entirely neglected, has lagged far behind, and has, I believe, not accomplished the good that we have a right to expect.

It is not my purpose to go at length into the technique of treatment at this time. But just a few words of explanation so that the cases which I am about to report may be better understood. Soft, medium and hard, in reference to X-ray tubes, are relative terms, meaning that the tube is of a low, medium or high degree of vacuum. In other words a soft tube is one which is not so nearly exhausted as a harder one, and which therefore offers less resistance to the passage of an electric wave or current.

In the measurement of dosage the following factors are to be considered: The vacuum of the tube, the amount or quantity of current, the distance of the tube from the part to be treated and the length of exposure. With proper equipment these are easily determined. If, in addition to these, we make use of a radiometer dosage may be measured with a fair degree of accuracy. A very convenient radiometer is that of Dr. Hampsen, which consists of pastiles of platinoeyanide of barium and a graduated color scale. When exposed to the X-rays platinoeyanide of barium changes in color. By comparing with the scale the degree of change is noted and the dose estimated. A change of four degrees indicates a depilatory dose and is sometimes spoken of as a full dose.

With this explanation gentlemen, which is of necessity very limited, I pass to the report of the following cases treated at Rawlings and Rogers' Clinic:

Case 1. Man about 50. Epithelioma about size of dime on lobe of right ear. No microscopic examination made, but typical picture of epithelioma. Patient gives history of having been treated by X-ray some years previously for similar condition on face. First exposure was of five minutes' duration and distance of tube from surface was 10 1-2 inches, with a voltage of fifty thousand and four milliamperes. Second exposure one week later, same distance, voltage and milliamperes, length of exposure six minutes. One week after second treatment marked improvement was noticed. The proliferating cells which had been somewhat above the surface had receded, and were now on a level with the skin. Three treatments sim-

ilar to the one last mentioned, given one week apart resulted in complete cure so far as it is possible to determine.

Case 2. Man aged 67 presented himself for treatment five years ago. There was a hard nodular protrusion 1-10 to 1-8 of an inch thick and covering about one-third of margin of lower eyelid. He had noticed an abnormality for some time, but recently it had begun to increase in size and became the cause of alarm. He was given a number of treatments varying from a few days to two weeks or more apart, and ranging from seven to fifteen minutes at each sitting. A coil machine was used. No secondary voltmeter or milliamperemeter were utilized. After several treatments there was a retardation of the growth and apparently a slight diminution in size. But after a long series of treatments with no further discernable results the patient and the operator became discouraged. For about two and one-half years no other treatment was instituted. Then on account of the sudden increase in size other measures were sought and the so-called snow treatment was started by another physician. After several applications from which there were no apparent results the patient became discouraged and gave it up. When I saw him a short time after this the growth was at least twice as large as when he first came to me. He was considerably disturbed concerning its rapid development and decided to try the X-ray again. With a medium tube 10 1-2 inches from the surface, carrying four to five milliamperes, and a secondary voltage of sixty-four thousand, he was given seven minutes treatment. This equaled three and a half H. units. The eye and the surrounding tissues were protected by a heavy lead plate. When he reported for the second treatment the growth had diminished so that it was not more than one-half as large as two weeks previously. After second treatment the growth entirely disappeared.

Case 3. Referred by Dr. King, of White Plains, Ga. Man aged 50. Family history: Father had cancer of lip, otherwise good. The following history was obtained: Measles, pertussis and typhoid fever when a child. Has a few times in life had rheumatoid pains. Present trouble began about one year ago. He has not felt well during that time. Has not been in bed, but feels badly. Loss of strength and energy is mark-

ed, and there is a considerable loss of weight. He takes cold easily, cough is annoying and is worse just after retiring: considerable quantity of sputum is raised. At present appetite is good, but there is a fullness after meals and much gaseous eructation. Bowels regular, but there is considerable quantity of mucus in stools. On inspection patient is noticed to be thin and emaciated and has a slight flush on cheeks. The abdomen is greatly distended and enlargement is somewhat greater on left than on right side. Physical examination of chest reveals nothing significant. On palpation of abdomen a large, hard mass which extends from up under edge of ribs to the crest of ilium on the blood pressure 125 mm. A smear of blood was taken and the diagnosis of splenomyelogenous leukemia was readily made. X-ray treatment was decided upon and the first exposure was of six minutes' duration applied over the anterior splenic region. A medium vacuum tube was used at a distance of about 12 inches from the surface. One week later the second treatment was given over the same area with a somewhat harder tube and of eight minutes' duration, distal side is distinctly outlined. It fills the larger part of the epigastric and umbilical regions and the whole of the left lumbar. The tumor is movable and pressure from the rear impinges it on the hand placed in front. Urinalysis is negative. Examination of gastric contents shows absence of hydrochloric acid; haemoglobin 65 per cent and tance of tube from surface lessened to 10 inches and with a millampereage of from four to six. When the patient presented himself for the third treatment there was considerable tenderness, redness and swelling over the region previously exposed; evidently there was a rather violent reaction. For this reason, as well as for others, the next site selected for exposure was the right femur. About the same vacuum tube, millampereage, etc., as used in the second treatment was employed. After this treatment on account of the intense reaction over the splenic region, an interval of seven weeks elapsed before the next treatment. Up to date the patient has had eight treatments: Two over the spleen anteriorly, three posteriorly, and three over the femur. Blood count was not made on first visit of patient. On his second visit the leucocyte count was 230,000. After the seven weeks' interval

referred to above the leucocyte count had dropped to 86,000. On account of the burn resulting from the second treatment all following treatments were given guardedly, and a white blood count made on March 29th showed an increase to 116,000. The last blood count made on the 13th of the present month is as follows:

Date of Examination April 14, 1917.

Patient, Mr. T.

Diagnosis, Spleno-myelogenous Leukemia.

Complications, Malaria.

Blood Examination:

Haemoglobin, 70 per cent.

Erythrocytes, 5,008,000 per cmm.

Leucocytes, 106,000 per cmm.

Differential Count:

Polymorphonuclears, 81 per cent.

Myelocytes, total 12/2-3 per cent.

Neutrophile, 11/2-3 per cent of total Leuk.

Eosinophile, 1-2 per cent of total Leuk.

Basophile, 1-2 per cent of total Leuk.

Basophiles (Mast Cells, 2/2-3 per cent.

Poly. Eosinophiles, 1/2-3 per cent.

Lymphocytes, 1 per cent.

Large Mononuclears, 1-2 per cent.

Transitionals, 1-2 per cent.

Blood Picture:

Red Blood Cells Show:

Malarial Parasites

Basophilic granulation

Polychromasia or Polychromatophilia

Poikilocytosis

Anisocytosis.

Normoblasts (rare)

Cabot's Ring Bodies

Crenation

Slight Stippling.

After the second treatment, the heaviest given, the patient complained of frequent loose stools, accompanied by griping, for several days. The cause for this was in all probability the destruction of a large number of leucocytes resulting in a leucotoxin.

The haemoglobin of this patient has increased from 65 per cent to 75 per cent. He is feeling some better and has gained four or five pounds. With the possible exception of benzine treatment this is the only agent that offers any promising results.

For the examination of gastric contents in this case I am indebted to Dr. N. J. Newsum and for the blood count I wish to express my appreciation to Dr. Louis Hannah.

With the following cases I shall not weary you with a detailed history.

Case 4. Referred by Dr. Carter of Blundale, Ga., December, 1915. Child aged 6, with two enlarged glands, one size of a lemon and other size of a lime, both on left side of neck. These were removed and a microscopic examination showed evidence of Hodgkins' disease. In two or three months after operation return of glandular enlargement was noted at the original site. These continued to increase in size until January, 1917, when there was a mass the size of an orange. At this time X-ray treatment was instituted and three treatments with ten days' intervals were given. Then two treatments with fifteen days' intervals, and then after an interval of six weeks the last treatment was given on the 17th of this month. There is now no noticeable enlargement on inspection, though a few small glands can be palpated. The general appearance and welfare of the patient is much improved.

Case 5. Case treated for tetter of the hands. Three treatments given in four days. The first and second treatments a medium tube, 12 inches from the surface and carrying two milliamperes was used; duration of exposure three minutes each time. This was one H. by Dr. Hamsen's radiometer. On the fourth day a soft tube carrying a milliamperage of three and one-half and at a distance of 11 inches from the surface was used for five minutes. This was two to two and one-half H. on radiometer. Third day following this exposure some redness and a stinging sensation was noticed. This stinging gradually became worse until the tenth day when pain became very fiery red color. About this time ulceration commenced and there was evidently a rather severe burn. For three weeks there was most intense pain and dressings had to be changed from six to twelve times daily in order to avoid opiates. After this there was a gradual improvement and after about three more weeks she was able to use her hands. The skin, however, was thick and rough and all the nails came away. During the summer she has little trouble, but in winter her hands chap more easily than they did formerly.

In February of this year a small, bleeding fissure appeared on the dorsal surface of the distal phalanx of right thumb. With all manner of persuasion this failed to heal and the middle of March she came to me with

an ulcerated and greatly swollen thumb. After four weeks of diligent treatment the ulcer is apparently well and my anxiety is greatly alleviated.

Case 6. The last case, gentleman, is one of lupus in a small negro boy, aged 11, having all the prominent symptoms of advanced pulmonary tuberculosis. A deep tuberculous ulcer covering an area over the whole right scapula, with two large ulcerations just below right clavicle. The patient has received eleven treatments at intervals of two weeks applied over ulcer on scapula. By comparing the condition of this ulcer with ones in front we are able to determine the amount of improvement. I have this patient here for your inspection today, and you will be able to notice the healthy appearance of the treated ulcer as compared with other two untreated.

While the two cases of malignancy reported above are to all appearances well, yet the great majority of cases with which I have to contend are almost hopeless before they consult me. Perhaps the most frequent non-operative cases are those of malignancy involving the cervix uteri and adjoining tissues. Our usual method of procedure is to first thoroughly cauterize all the diseased tissue to which we can gain access, and then to give intensive irradiation. The patient is allowed to retain ordinary clothing except the corset. A rather hard tube is used with the anticathode at a distance of 13 or 14 inches from the surface and with the rays directed through the abdominal wall and toward the vaginal vault. An exposure of from eight to eighteen minutes with from two to six milliamperes is given.

In order to determine whether there was any, and how much, radiation at a distant point of the disease I have employed the following method: First, a pastile of platino-cyanide of barium is wrapped in oil paper and with the aid of a speculum and a pair of anatomy forceps is placed at the mouth or underneath the lip of the cervix. Four and one-half to five H. on the surface equals one-half to one and a half H. at this distant point, depending, of course, upon the size of patient, the density of tissues and the penetration of tube. If exposures be alternated first on one side and then on the other of pelvis, and yet with the rays directed toward the same common center the skin does not become intolerant before an appreciable

quantity of radium has reached the deeper structures. If we are persistent much may be added to the general comfort and welfare of a patient in such a deplorable condition as that under discussion; life may be prolonged, and there is a possibility that the inoperable case may become operable.

DISCUSSION OF DR. KING'S PAPER.

Dr. E. C. Thrash (Atlanta): I think Dr. King should have been more explicit about the filtering of his rays. X-ray treating is a dangerous proposition. I have been experimenting with it a little myself, but I am a little afraid. I had an abdominal case a short time ago that showed a leukocytosis of 200,000, and I suggested an X-ray, but I told him the danger of it. He did not care to risk any local man, so he went to Johns Hopkins and they gave him one treatment there and burned him from the pubes to the nipple rather severely, but not seriously. He stayed in bed two months from the burn. But the count went down, from 200,000 to 30,000, which was a splendid result and was well worth the burn he received. However, they refused to give him further treatment. It is extremely important that the rays be properly handled, and the proper cone to be used, and I would like to ask the Doctor about the filtration of the rays and also about the size of the cones he uses.

Dr. W. A. Cole (Savannah): I would like to agree with Dr. King in what he says about the X-rays not being used in the South as much as they should be. In the North and East I do not think that holds. They are used there quite extensively. His classification in regard to epithelioma is as it should be, to my mind. Dr. Holdrigg, of New York, has recently shown that epithelioma with fibroid is absolutely cured by the Roentgen rays. This is a permanent cure. In the squamous cell type it could be cured to last from one to five years, but almost inevitably this type comes back, but in the other type we get the same response, but they always kill.

I agree with the last speaker that the matter of filtration is very important. A light tube without the means for filtration is almost on a par with surgery before the time of asepsis. I would like to ask the Doctor if he thinks leukemia is to be cured by the X-ray. My observation is that it is helped,

but that almost inevitably the disease comes back and the patient finally dies from it. One condition he did not mention is recurrent carcinoma of the breast. These cases operated on have a recurrence of 61 per cent after the operation. By the use of the Roentgen rays following the operative procedure the recurrent percentage is reduced to 30, and I think that is well worth while. His paper covers fairly well the scope of Roentgen therapy, but there are several other conditions that we do treat. One thing in which I have had excellent results is the so-called functional menorrhoea, those cases in which there can be no pathologic lesion demonstrated.

Dr. T. Byron King (closing): In regard to filtration, that should be determined by the results you wish to obtain. If we are treating the surface, the filtration should not be as carefully looked after as if we are treating the deeper part. If you are treating the surface two thicknesses of heavy pasteboard and a small piece of aluminum is what I use as a filter. In other cases where we treat the deeper part, the clothing is allowed to remain on and an aluminum plate is used and also a piece of heavy leather.

DO YOU KNOW THAT

Infected towels spread eye diseases?

Keeping healthy is a part of doing "your bit"?

Peace hath her health problems no less than war?

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EMERGENCY HEAD SURGERY.*

By Charles E. Dowman, A.B., M.D., F.A.C.S.,
Atlanta, Georgia.

I fear the title of this paper is misleading, as it implies a discussion of **all** injuries to the head, whether slight or grave, which might be brought to the attention of the physician. It is my purpose, however, to discuss **only** those head injuries in which there is a possibility of brain damage.

Let us suppose that a physician is called to see an individual who has been hit on the head, or who has sustained a serious fall. Perhaps he is not rendered unconscious, but is able to walk to his home or to resume his work; yet a few hours later becomes drowsy and goes into an unconscious state. Perhaps he becomes unconscious immediately upon receiving the injury and shows no tendency to come out of this condition, but rather, sinks deeper into a state of coma. Perhaps unconsciousness is only transitory, the patient regaining full consciousness a few minutes after the injury. Perhaps there may be only a slight laceration of the scalp, with or without evidences of brain damage. What will the physician do under these various circumstances? Will he be content with making a purely superficial examination, and leave instructions that he will see the patient the next day; or will he assume the attitude that any injury, however slight it may appear, may have caused serious damage to the underlying brain, and is, therefore, worthy of the closest scrutiny and study before he is willing to pronounce the condition trivial?

It is difficult to imagine any type of injury which demands more careful observation and clearer surgical judgment. **A correct diagnosis is all-important.** The physician must be well informed on the subject of the pathology of increased intracranial pressure. He must inquire most carefully into the character of the accident in each particular case. His examination should consist of frequent observations of the pulse, the respiration, the blood pressure, the reflexes; if possible, the eye grounds, etc. He may even wish to make a spinal puncture and examine the cerebro-spinal fluid for blood. If an

X-ray apparatus is accessible, this examination may assist him in arriving at a definite conclusion.

When the physician arrives at his diagnosis, the next thing is to determine what should be the nature of the treatment. In discussing this phase of the subject, I will endeavor to give the results of some of the best workers in the field of cranial surgery.

The important question to decide in all such head injuries is whether the underlying brain has undergone damage or not, and if so, what line of treatment is best for the individual case under observation. We still hear a good deal about so-called "concussion of the brain." Unfortunately a great many cases in which the brain has undergone definite lesions, are diagnosed as "concussion."

Adami, though admitting that in so-called "concussion of the brain" the nature of the lesion is obscure, claims that in some cases minute hemorrhages are noted. According to him, it is probable that the injury in such cases leads to a rupture of the finer capillaries, solution of the continuity of certain nerve paths, and degenerative changes in the fibers and ganglia. It is generally admitted today that the term "concussion of the brain" is only to be used when a definite organic lesion is not found to be present, thus making the condition a purely functional one. To make such a differentiation, the most painstaking and continuous observation of the patient is required. When the brain is undergoing intracranial pressure the physical signs are practically the same, whether the pressure is due to the accumulation of blood from a ruptured middle meningeal artery or to the edema which follows disturbances of the brain tissue themselves.

The vaso-motor, the cardio-inhibitory, and the respiratory centers are all situated in the floor of the fourth ventricle, and are affected by the anaemia which results from severe compression of the brain mass. As soon as the cerebral pressure exceeds the blood pressure, the vaso-motor center is stimulated and the blood pressure is raised above the cerebral pressure. The center thus receives fresh blood and again relaxes and the pulse curve falls below the compression curve. Again an anaemia is produced and the vaso-motor center goes up, and so on. The respiratory center, instead of being stimulated during anaemia,

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is depressed. This causes the well-recognized slowing of respiration which occurs as cerebral pressure is increased. The cardio-inhibitory or vagus center is also stimulated by the progressive anaemia, giving rise to a slow pulse. **Thus we have in the study of the pulse, the respiration and the blood pressure, most valuable guides toward a correct diagnosis.** Not infrequently following the accident, the signs of shock (which is usually present), overshadow or even prevent the signs of increased intracranial pressure. If the patient survives this acute condition of shock, then the pulse rate gradually descends, the blood pressure rises, and the deep reflexes, often obliterated immediately after the accident, return. These changes in the reflexes are most interesting. Not infrequently when the patient emerges from the condition of shock to enter the so-called "pressure stage," the abdominal reflexes will appear depressed or absent on the side opposite the cerebral lesion.

It is most important in all such cases to make careful examinations of the eye grounds. It is rarely possible to observe the early stages of choked discs within six hours after the injury. If the shock is slight and the intracranial hemorrhage a fairly rapid one, blurring of the nasal sides of the optic discs may occur. As the intracranial pressure increases, the veins of the retina become engorged, and eventually choked discs will be noticed.

In doubtful cases it may be wise to do a lumbar puncture and obtain enough spinal fluid to examine microscopically for blood. Some information may be gained by nothing the pressure of the cerebro-spinal fluid when the puncture is done. If there has been severe brain laceration at the time of the injury, usually red blood cells will appear in the cerebro-spinal fluid. The absence of blood, however, does not necessarily mean that the brain is not undergoing severe pressure, for it is easy to understand how an epidural hemorrhage from a ruptured middle meningeal artery could take place without blood escaping into the cerebro-spinal fluid. It must be kept in mind also that a spinal puncture is not entirely without danger. Should the pressure in the spinal canal be reduced too rapidly, it is quite possible that the pressure in the brain may cause the medulla to herniate down into the foramen magnum, thus causing a severe disturbance of

the vital centers situated in the floor of the fourth ventricle. The result is immediate death. This valuable aid to a diagnosis, however, should not be overlooked, and should certainly be resorted to whenever one is in doubt.

X-ray examinations are of little importance in the treatment of diagnosis of fractures of the skull. In depressed fractures they may be of some help; but in basal fractures and even in linear fractures of the vault, not only is it rare for the line of fracture to be revealed by the X-ray, but the treatment is the same whether a fracture is evident or not.

Severe head injuries usually fall into one of the three following classes: (1) Those cases in which there is generalized contusion of the brain and its envelopes with or without fracture; (2) circumscribed depressed fractures, with or without localized injury of the brain or meninges; (3) a combination of the above two types; namely, those cases in which the character of the fracture and its mode of production are exaggerations of the depressed type, although the effects upon the contents of the cranium are of the first type.

Besley in his analysis of 1,000 cases of fracture of the skull at Cook County Hospital gives a report of seventy-four cases examined at necropsy. He was convinced that fractures of the base are not produced by a bursting force, but are due to a direct force applied through the articulation of the condyles and atlas. The thinness of the skull in the region of the middle fossa accounts for the frequent fractures at this site. In other words, Besley feels justified in the assumption that in the large majority of fractures of the base, the bursting force is not a factor; but that the true mechanism is the counterforce at the condyles producing a fracture by imbinging, or that basal fracture is the direct extension of the fracture at the vault. In his opinion fracture of the base is much more frequently associated with fractures of the vault than is commonly supposed. He found them associated in 72.9 per cent of his cases. Brun, in an analysis of 470 cases, found them associated in 70 to 75 per cent.

There is little need for a discussion of simple depressed fracture cases. Here we have as a rule a localized depression, with or without laceration of the overlying structures. The symptoms vary according to the

location involved. Frequently there are no symptoms other than those of the localized trauma, especially when the underlying brain is one of the so-called "silent areas." Occasionally, however, one will have symptoms according to involvement by pressure of one or more of the active cortical centers. This was illustrated in one of my own cases where a depressed fracture over the left temporal region caused an aphasia which cleared up immediately after the bone had been raised. I have been in the habit of treating these simple depressed fractures by cutting down on the depressed bone and elevating it, at the same time examining the underlying structures to see if possible whether or not there was any injury to the brain. I do not think that this treatment is necessary in all cases, for one not infrequently sees patients who at one time or another had a depressed fracture and who never developed any untoward symptoms whatsoever, although no operation had been done.

It is the treatment of those cases in which we have definite evidences of an increasing intracranial pressure, that gives rise to many conflicting opinions.

There are some who still follow the teachings of the late Dr. Fenger concerning the management of skull injuries. According to his method, any patient who had been injured sufficiently to be rendered unconscious, was put to bed with an ice pack on his head and kept there for six weeks, regardless of his symptoms. This so-called "palliative treatment" of head injury is still followed by a great many surgeons.

At the Cook County Hospital of Chicago during 1912, there were 130 cases of skull fracture, 72 being recognized as involving the vault and 58 involving the base. A decompression was done only in those cases which showed a depressed fracture. In all cases of fracture of the base of the skull, the so-called "expectant treatment" (as outlined by the late Dr. Fenger) was carried out, except where a depressed fracture involving the vault coexisted with a basal fracture. The mortality on the expectant plan for basal fracture during this year is shown to be 56.9 per cent. Elsberg reports a series of 60 cases of fracture of the skull treated according to the so-called "expectant method." The mortality in this series was 60 per cent. Compared with this might be his series of 22 patients who were operated upon, either a

unilateral or bilateral subtemporal decompression being performed. Of this series the mortality was only 22.7 per cent. Cushing's mortality, according to the "expectant method" was 50 per cent, while in his series in which decompression was practiced, his mortality was not over 13 per cent. In three of the large hospitals of New York City, between the years 1900 and 1910, the mortality of all cases of brain injury was from 46 per cent to 68 per cent. In the 1,000 consecutive cases of fracture of the skull at the Cook County Hospital of Chicago the mortality was 53 per cent. The so-called "expectant treatment" was practiced in practically all these cases.

Thus it is seen that the mortality of brain injuries in adults is very high, when these patients are simply to bed and not treated with operative measures. This high mortality is due chiefly to the fact that the patients are allowed to reach the dangerous stage of medullary compression which is the result of extreme intracranial pressure. There is no question but that oft-repeated careful examinations should equip one to anticipate this dangerous stage.

There is no one who will contend that a case diagnosed as ruptured middle meningeal artery should not be operated upon. Is it logical that one should be so energetic in relieving the brain of that pressure which is caused by the accumulation of a blood clot, and yet utterly overlook the necessity of relieving the brain of severe pressure caused by hemorrhage within the brain tissue itself or by the edema which is sure to follow the brain injury? Personally, in the final analysis, I fail to find the distinction. The ruptured middle meningeal artery gives rise to pressure which perhaps comes on more rapidly. Nevertheless the edematous, swollen brain may cause just as much damage to nerve fibers and important centers.

An early operation in such cases is advisable, not only as a means of saving the life of the patient, but also of lessening the danger of the post-traumatic conditions so commonly the result of fractures of the skull. These neuroses, such as marked depression, irritability, persistent headache, and even epilepsy, are due in the majority of cases to the resulting unrelieved intracranial pressure, often prolonged over a period of several weeks or more. Dudley Allen, of Cleveland, several years ago, published a paper in which

he analyzed a large number of cases of skull injury without penetration of the dura. Most of the patients eventually found their way to an asylum—most of them had subdural irritation. Sharp, of New York, was able to trace, several years after they had been discharged from the hospital as cured, 34 per cent of the patients who had had fractures of the skull and had been treated palliatively. Of these 34 per cent, 67 per cent were still suffering from the effects of the trauma; that is, they did not enjoy the same good health they had previous to the injury. The most common complaints were headache, fatigue on slight exertion, vertigo, a lessened emotional control, usually of the depressed type; irritability, inability to keep employment, and listless lack of interest in things. Many of these individuals were called "good for nothing," "bums," "happy go lucky," etc. Epileptiform attacks were of not infrequent occurrence. I believe the supposition is justifiable that the majority of these late sequellae were due to the damage to important nerve structures, brought about by the edema from which the brain suffered during the so-called "compression period." Therefore, if by doing well-timed decompressive operations we accomplish nothing more than the prevention of these distressing late symptoms, such operations would certainly be justifiable. But in addition to this, statistics show us that **more** is accomplished, for operative interference in the hands of experts has brought the mortality from 50 to 60 per cent down to 13 to 23 per cent.

I do not wish to be misunderstood as advocating operative procedure in all head injuries. If oft-repeated examinations give no evidence of greatly increased intracranial pressure, operation can be safely delayed. However, if symptoms due to pressure from blood or from edema of the brain tissue appear, then the brain should be given room by means of a decompression operation. It is poor surgical judgment to operate on patients having brain injuries, no matter how extreme, if a condition of severe shock is present. If the pulse is above 120 it is advisable to avoid even all examinations not absolutely necessary, and to depend for the time being on the routine palliative treatment. Very often during this period of shock one is unable to elicit any of the signs or symptoms of increasing intracranial pressure. Any operative procedure for the re-

lief of increased pressure should be undertaken while the pulse rate is descending (at 60 or below), for once it has reached the lowest level of medullary compression the danger of a medullary edema is great. If this occurs, the pulse rate begins to rise rapidly, and it is doubtful that a patient ever recovers, whether operated on or not, once the pulse rate has descended to its lowest level and then begun to rise rapidly.

Conservatism, above all, is indicated in fractures of the skull, and one should have definite signs and symptoms of increased intracranial pressure before surgical interference is instituted. If, however, these signs and symptoms are present, one should not hesitate to give the brain room by means of a well-timed and well-placed decompressive operation. No surgeon would allow a plaster cast to remain on a leg where the swelling is so great that there is danger of gangrene. Why, then, should he allow the brain to be subjected to an analogous pressure? Conservatism, therefore, in my opinion, means careful study and well-timed operative pressure, and **not** superficial, careless observation and the salving of one's conscience with the statement, "Oh, well, he will either die or get well, anyway, so put him to bed and we will see what will happen."

DISCUSSION OF DR. DOWMAN'S PAPER.

Dr. W. A. Selman (Atlanta): This subject is of extreme interest to me, being connected with the City Hospital, where so many head injuries are brought in, especially since there are so many automobiles—so many old men who are forgetful of this recent invention that travels so much faster than they do. They are brought in with these very symptoms—slow, irregular pulse, projectile vomiting, and evidence of intercranial pressure. I think these statistics read by Dr. Dowman can be reduced from a mortality of from 50 per cent to 60 per cent, to 20 to 30 per cent, and in these days of aseptic surgery when it is not so dangerous to open the cranial cavity, they should be given the benefit—after careful watching—of opening the cranial cavity, instead of putting them to bed and letting them die or get well, as the case may be.

Dr. W. E. Persons (Atlanta): I think this paper is very timely and should be taken to heart especially by those people who do this

class of cases. I have had exceptionally good results by operating on these cases. A great many people get well of brain injury, but are hopeless idiots the rest of their lives. I know such a boy that I treated four or five years ago—his family opposed operation, and he is now wandering about the streets—an idiot.

Dr. E. C. Osborne (Atlanta): Dr. Dowman spoke of the examination of the eye ground in these cases. I think the real value that you get out of examination of the eye ground is that if you examine them immediately you know the condition of the disc. There may be some slight edema then. You make a mental note of that condition and at the subsequent examination you will be able to tell whether the pressure symptoms are increasing or decreasing, and it will be a valuable aid in determining whether there is additional edema of the disc and whether a choked disc subsequently develops. Another point in these head injuries is infusion under the conjunctiva. That may be due to fracture of the base, and if you will stain the conjunctiva with a solution of fluorid acid, if there is any trace in the conjunctiva or cornea, it stands out a brilliant green. It is impossible to mistake. Of course, this hemorrhage may be due to direct injury of the conjunctiva, and it may be local. I have always found that this has been a rather useful procedure in these cases. It certainly does not take any time and it does not irritate the conjunctiva or cornea at all, and there is no reason why it should not be done.

Another point that I have noticed is that sometimes in these injuries you will get crepitation under the conjunctiva, particularly on the nasal side. This, in nearly all cases, is due to some of the veins around the nose, usually the lachrymal veins.

Dr. C. J. Montgomery (Augusta): I would like to have one point elucidated. He gave us a certain number of statistics in regard to the treatment of cases of fracture of the skull. He spoke of the much better results in operative treatment, a large proportion of the operative treatment being injuries of other portions of the brain. I would like to know under what condition in fracture of the base of the brain he would operate, where he would operate, and if he could give us any statistics of the difference in expectant treatment of fracture of the base of the skull and operative treatment?

Dr. C. E. Dowman (closing): I will answer the last question first. It was in cases of fracture of base of the skull that I gave the statistics. In other words, Ellsberg in his series of cases treated palliatively had 60 per cent mortality; treated by depression the mortality was 23 per cent. The same way with Cushing. In other words, these cases of fracture of the base where you have enough damage to give intra-cranial pressure, I would say operate. It is the increasing intracranial pressure that is an indication for operation. Very frequently fracture is not destructive and the operation consists in giving the brain room, usually high on the right side—making a liberal opening into the dura and giving the brain room. During that operation you can check what hemorrhage is necessary and drain the blood if necessary by putting drains under the tip of the temporal lobe. If that does not do you might do a double-sided operation.

In regard to fusion under the eyelids, I think it is unfortunate the text-books have laid so much stress on black eyes and bleeding ears in these cases, because so many physicians depend upon these signs for their diagnosis. I have seen case after case where there were no such symptoms, but it is the careful examination of the pulse, oft-repeated every 15 or 20 minutes, the respiration, the eye grounds, and the blood pressure above all. The pulse rate, the increased intra-cranial pressure, shows it is a medullary edema that occurs with hemorrhage of the vaso-motor center.

The eye ground examination is important. You never see a choked disc under six hours; usually a few days after. But you can get the size of the veins, and then an hour after look to see if these veins are not a little fuller.

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URINARY SYMPTOMS IN THE FEMALE.*

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You, of course, are familiar with the classical symptoms of each of the disorders of the urinary tract, and I shall, therefore, not discuss them, but shall consider several of the disorders with atypical symptoms referable to some other portion of the tract and thereby misleading as to diagnosis. In fact, the purpose of this paper is to emphasize this latter; that an accurate diagnosis can not be made from symptoms alone, but all cases should be subjected to a cystoscopic examination whereby detail as well as accurate diagnosis can be made. These illustrative cases are not exceptional, but rather they are met with frequently and should, therefore, strongly urge thorough examination.

Success in the treatment of any ailment depends upon the accuracy of definite localization of the lesion, accuracy in diagnosis. One of the best illustrations, with which we are all familiar, of disaster from treating symptoms is that in "hip joint disease," when the pain in the knee, to which it is so frequently referred, has been receiving attention at the expense of the hip joint. In addition to the neglect of no attempts to arrest its course, it is not infrequently actually aggravated by the therapeutic measures directed to the knee. Happily, this feature has been so emphasized that such mistakes are rarely encountered at this time. Unfortunately, though, this can not be said of urinary lesions, in which field we still attempt to diagnose from symptoms and institute treatment which only too frequently is of no benefit and, therefore, allows the disease to continue its course unchecked, but occasionally actually does harm.

To illustrate:

Mrs. C. suffered with sharp stabbing pains in the back over the kidneys (apparently true kidney colic of short duration), frequency of micturition and some dysuria. She had had morphia for the "kidney colic" and repeated bladder irrigations. Obtaining no relief, she came under my care, when, after examination, the diagnosis of acute urethritis was made and treatment with applications

of silver nitrate begun, under which she promptly cleared up. Wax tipped catheter passed into the pelvis of each kidney as well as X-ray failed to show any suggestion of stone, nor was there any infection of kidney or bladder—simply a case of referred pain from the urethra.

Mrs. B. was seen because of pain and aching over the bladder, frequency and at times some dysuria. She was found to have a double pyelitis (staphylococcus infection of one and colon bacillus of the other kidney), and, of course, a cystitis. She also had strictures of both ureters. Because of the pain and aching in the pelvis she had been subjected to exploratory laparotomy with an appendectomy, the removal of two or three small fibroids and suspension of the uterus, with no relief. The pyelitis and cystitis were readily cleared up by lavages of silver nitrate. Several weeks later she began to have acute attacks of severe pain in the left lower quadrant of the abdomen, which required large doses of morphia to relieve. Upon examination, the strictures of the left ureter were found to have reformed and after redilatation of these, the symptoms ceased.

Miss C. was referred with the diagnosis of acute appendicitis and for emergency operation. She had an apparently typical attack, with pain and tenderness over McBurney's point, nausea and vomiting, but also, frequency of micturition, voiding every 20 to 30 minutes since soon after the onset of the attack. Because of this frequency, a cystoscopic examination was made and a right pyelitis, with a pure culture colon bacillus, was found. She obtained marked relief from lavage of the pelvis with silver nitrate. Two or three following treatments at weekly intervals cleared up the infection. Here, a pyelitis closely simulated an acute appendicitis.

Mrs. G. complained of frequency, dysuria and nycturia. At times she had backache with occasional fairly sharp momentary pains in the region of the left kidney. A stone in the left pelvis, as shown both by scratches on the wax-tipped catheter and confirmed by the X-ray, accounted for her symptoms. There was no infection or inflammation of the bladder or urethra, therefore the symptoms evidently referred from the kidney.

Mrs. N. had suffered for 11 years with a rather vague indefinite aching in the back

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over the right kidney with attacks of frequency. Five months previously she noticed a mass in the right side below the costal margin and soon began having typical attacks of kidney colic. Catheterization of the kidney revealed a pyelonephrosis of 240 c.c. capacity, which was confirmed at operation. It is very probable that she had an old pyelitis which had been suddenly converted into a pyelonephrosis, but which could have been cleared up by appropriate treatment.

Miss H. complained of pain in the right lower quadrant of the abdomen with frequency and nycturia (two or three times), and occasional attacks of dysuria. The pain at times was referred over the entire right side of the abdomen. Her past history was negative except for several attacks of tonsillitis. Upon examination she was found to have several strictures of the right ureter with a moderate hydronephrosis (22 c.c.). The staphylococcus aureus was obtained in pure culture from the kidney. She preferred the more fashionable "appendicitis," which diagnosis had been made by two or three others who had seen her, and submitted to operation by one of these in another state, but without relief. She then returned for appropriate treatment—attention to the tonsils, dilatation of the strictures and lavage of the renal pelvis with silver nitrate. She was cured in a very short time. Examination several months later showed no signs of recurrence of the strictures and the capacity of the kidney pelvis 10 c.c. This case is especially interesting because of the probability of the tonsils being the focus of infection, attention to which was first called by Hunner several years ago.

Mrs. V. complained of general malaise, slow gradual loss of weight, moderate frequency and nycturia (one to two times). Careful physical examination failed to locate any trouble which would account for the symptoms. Because of the frequency and nycturia, a cystoscopic examination was made. The left ureteral orifice was edematous and inflamed. On catheterizing this kidney the urine obtained was found to contain several tubercle bacilli, thus clearing up the diagnosis. In view of this finding, a specimen voided earlier as well as that obtained by catheter from the bladder at the beginning of the examination was carefully examined, but failed to show the bacilli. In

this case the actual introduction of the kidney catheter was evidently the means of clearing up the diagnosis:

Conclusions.

That urinary symptoms so frequently mean merely that there is some disturbance in the urinary tract, and especially is this true of a persistent frequency.

That symptoms offer no true clue to the localization of the lesion, but rather are frequently misleading.

That chronic frequency is very suggestive of renal or ureteral disease.

That bladder symptoms of various kidney disturbances are so similar that only by careful study of the clinical symptoms followed by the use of instrumental and laboratory methods can a differential diagnosis be made, not only between kidney and bladder, but also between the various lesions of the kidneys.

MAJOR OPERATIONS UNDER LOCAL ANAESTHESIA—WITH REPORT OF CASES.*

W. A. Selman, M.D., Atlanta, Ga.

In presenting this paper, I feel that this subject has a distinct place in major surgery, though it has for years been mostly limited to minor operations. This restricted limitation, however, was not due to any lack of surgical skill, but to the fact that until within recent years no local anaesthetic had been discovered that met the requirements of almost limitless administration with a minimum of toxicity. This problem has been most thoroughly worked out experimentally by a number of progressive surgeons, foremost among whom is Dr. Crile of Cleveland. It was upon the study of his experiments and deductions that I have undertaken this work, and to him and his colleagues I gladly give credit for what knowledge I have of it.

In the selection of an anaesthetic, whether local or general, the question that should be uppermost in our minds is not under what anaesthetic can I do the best operation, but under what anaesthetic can I give my patient the most assurance of recovery. No one anaesthetic, general or local, is adapted to all cases—for instance, I regard ether as a gen-

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eral anaesthetic, in the vast majority of cases the one of choice. Yet in many cases of infection ether would only add to the already heavy burden of the phagocytes and be the determining factor for a fatal termination, whereas, as gas-oxygen anaesthetic would leave the cells unharmed, and with the cause removed, win the victory.

Passing on, there is a class of cases fewer, it is true, but still sufficient to demand our attention, to which we deem it unsafe or inadvisable to give any inhalation anaesthetic. Then we have to consider spinal, intravenous, rectal, or local anaesthesia. Each of these methods has its advantages, its dangers, and its limitations. However, it is only with the local with which I am concerned at this time. First, as to the local anaesthetics used—for the immediate anaesthetic effect, whether in skin, fascia, muscle or peritoneum, novocaine solution 1-400 is amply sufficient, the main precaution to take is to thoroughly inject each layer before cutting. The novocaine alone thoroughly desensitizes the part and lasts for approximately one hour. However, other phases enter for the comfort of the patient both before and after the actual operation. As a preliminary, just as in general anaesthesia, it is usually advisable to administer a hypodermic injection of morphine, grain 1-6 and acopolamine grain 1-150, one hour before the operation. This both allays the nervousness of the patient and tends to actually prevent shock from the operation.

To further block the nerves to prevent post-operative pain, a solution of quinine and urea hydrochlorid is injected into the tissues well away from the incision, yet made through the edges of the incision. This causes some oedema of the tissues, yet it is well away from the line of incision and in clean cases should not interfere with primary healing. This produces an anaesthesia that begins by the time the novocaine begins to die out and lasts for two or three days. This quality makes post-operative pain almost nil and indeed is of such marked value that many surgeons use it as a routine in conjunction with general anaesthesia for the same effect. This nerve blocking principle, whether used alone or with a general anaesthetic, greatly lessens the afferent impulses to the central nervous system, consequently lessening shock from nerve stimuli just in

proportion to the thoroughness with which the tissues are injected.

Report of Cases.

Case 1.—J. S., negro, age 60. Admitted to Grady Hospital March, 1914, with a strangulated right inguinal hernia, complicated with general anasarca from a cardio-renal affection so marked that the patient could not lie down, due to the pulmonary congestion, and presenting an extreme degree of oedema in all his tissues. This was a bad picture without a strangulated hernia. However, under novocaine anaesthesia, together with morphine pushed to the limit of tolerance, we succeeded in relieving the strangulation, which we found to be due to oedema of the mesentery, which instead of being a membrane had assumed a thickness of almost an inch. The intestine regained its color sufficiently so no resection was done. A very tedious dissection of the sac consumed a long time, as a truss had been worn for years.

A very good closure was finally gotten and he was sent to the ward with a grave prognosis. To our surprise he did better generally after the operation than he had before. He suffered no apparent shock. In fact, the morphine seemed to give all his tissues a needed rest, and he improved steadily until able to leave the hospital cured of his hernia and improved generally.

Cases Two and Three.—These two cases being in every respect so similar, I report them together. On April 9, 1915, I was called by Dr. Burnett, of Winston, Ga., to see two children living in the same community, a boy and a girl, each 7 years of age. They had pneumonia about two weeks previously. Each had an empyema involving the entire left pleural cavity.

We decided any general anaesthetic would be dangerous, having only one lung at work, very septic, and drenched with perspiration. We accordingly attempted the resection of a rib for free drainage under local anaesthesia. For this we used the ordinary hypodermic tablet of novocaine and adrenalin, making a 1 per cent solution of novocaine. By constantly talking to the boy concerning bird dogs, Shetland ponies, etc., we pinched up his skin and inserted a fine-pointed hypodermic needle without his feeling anything but the pinch. He conversed with interest about the dogs and horses, yet never realized we were operating upon him as we kept

our instruments out of his view by having him turned on his side and his eyes shielded by a towel. By carefully novocainizing each layer and even the periosteum of the rib, we actually slipped a rib clip around his rib and cut out the section without a whimper from him. In a moment we had inserted a sharp pointed hemostat through the bed of the rib and had pus flowing through a rubber tube without his ever realizing that he was being operated upon.

We repeated the same technique at the next house, but the little girl scented mischief and nothing I could say got her entire attention. She did cry a little, more from fright than from pain, but soon we had her side drained in the same way, without any trouble, and when she did flinch she did it just as quickly from touching her body with your hand as from the actual cutting, for it was evidently from nervousness and from fright. Both cases drained freely and improved markedly until about ten days later, the boy was seized suddenly one night with an acute attack of vomiting and died before a physician could reach him. Whether this was from an embolus or some other cause could not be ascertained.

The girl made an uneventful recovery.

Case 4.—Mr. W. C., age 30. Referred to me July 5, 1915, by Dr. Geo. M. Niles. Diagnosis—chronic recurring appendicitis and active pulmonary tuberculosis.

History—About one year ago his home physician, Dr. J. W. Harper, of Jenkinsburg, Ga., diagnosed his case as pulmonary tuberculosis and treated him for same. However, each time he got him built up he would have a typical attack of appendicitis and would lose all he had gained. Examination of July 5th showed a dull area in the upper part of right lung with crepitant rales. The sputum showed tubercle bacilli. His abdomen was quite tender over McBurney's point, and pressure there caused pain and nausea.

He was admitted to the Georgia Baptist Hospital, and his appendix removed under novocaine anaesthesia with the preliminary hypodermic of morphine grain 1-4 and scopolamine grain 1-150 one hour before operation, with an additional 1-6 grain morphine just before operation. A McBurney gridiron operation was done, injecting each layer as it was reached. The appendix was easily brought up into the wound and was found to be quite large and uniformly thickened. Hand-

dling the appendix gently gave no acute pain, but the same nauseated feeling as when deep palpation was done. A few drops of novocaine was injected into the meso appendix before ligating it, but none was used on the appendix, as no pain whatever was produced when its base was macerated by a hemostat and a ligature applied. However, pulling or sponging caused him to complain some, but not acutely. His pulse never went over 94, his respiration was slow and even and he returned to his bed in comparative comfort. The quinine and urea solution prevented any acute pain, and he is now convalescing nicely, though running a little afternoon temperature from his pulmonary condition.

Case 5.—H. W., girl, 9 years, white. Referred by Drs. Bennett of Gay Ga., and Crawford of Locust Grove, Ga.

Admitted to the Georgia Baptist Hospital July 10, 1915, with the following history: Two weeks ago was with other children watching a tennis game. A stray bullet shot at a dog 150 yards away passed through her left arm entering the left side of the chest in axilla, passed out of right side of chest just posterior to mid axillary line and at the level of the sixth intercostal space. The bullet lodged in her clothing and fell at her feet, unscratched by any bone or other solid object. She was put to bed and her left pleural cavity soon filled with fluid so completely that dullness extended from base to apex with no transmission of sounds.

On day of operation at 12:30 p. m., she was given 1-300 grain of scopolamine and 1-12 grain of morphine. At 1:30 under novocaine a section of her rib was resected with no pain until the rib clip was passed around the rib, and then the patient only complained a little and did not even cry. The pleura was then opened and the fluid found to be blood, thin, dark, and apparently disintegrating clots.

Her temperature was 102.2-5 at time of operation. It went to 103 that night at 10 o'clock, then gradually dropped to 99 and has remained at about that since. She has been in comparative comfort and is now convalescing.

In conclusion, though my cases are few, I am convinced that many cases of pulmonary, cardiac, renal or other systemic affections that would make dangerous a general anaesthetic, can yet in many instances be safely

relieved of surgical conditions that make existence miserable. Many people are trudging along through life with a constantly nagging condition, or with a hernia that slips under his truss with every strain, possibly some one doctor has told him never to take an anaesthetic. To those who fear an anaesthetic from some fancied trouble, and to those who have real cause to fear a general anaesthetic, local anaesthesia should be welcomed as a Friend indeed.

SEPTIC INFARCTS OF THE KIDNEY.*

By George R. White, M.D., Savannah, Ga.

I have recently had three cases of haematogenous infection of the kidney or septic infarct, which brings up a subject presenting several problems in diagnosis and surgery. They will be mentioned briefly.

Case 1.—Male, 30, Nov. 14, 1915. While walking was taken with sudden pain in the right side and fell. The temperature rose to 102 and the abdomen became rigid; he was brought to Savannah on the third day; temperature 101; abdomen distended right iliac fossa; tender leucocytes 22,000; urine contained a little blood and pus; costo-vertebral angle tender; Murphy's sign positive; incision in the lumbar repon with neurectomy; the lower pole of the kidney was shot full of small abscesses averaging the size of a pea; the area about the abscess was congested and infiltrated; the remainder of the kidney was practically normal.

Recovery uneventful and lasting.

Case 2.—Male, 24; Dr. Daniel Claxter, December 15, 1916. Patient came to hospital with a history of pain in the abdomen referred to the right iliac fossa. The abdomen became distended the day before entering, and the bowels had refused to move from cathartics; vomited several times. Upon admission the temperature was 90; pulse 88; leucocytes 25,000; the abdomen was so distended that satisfactory palpation was impossible; the case presented the usual symptoms of fulminating appendicitis with peritonitis, and the usual operation for appendicitis was performed. The appendix was normal; considerable free fluid was found

in the peritoneal cavity and a mass located on the left side near the umbilicus; through a separate incision a gangrenous Meckel's diverticulum was removed and some inflammatory bands causing partial obstruction broken up. The wound closed without drainage. The following day, the patient suffered considerably, vomited several times and passed bloody urine, probably from catheterization. The urine cleared up the next day.

November 25. Wounds healed by primary union; patient complains of considerable abdominal pain, especially in the right side.

November 26. Dull, severe pain in abdomen and right side; temperature 102; abdomen slightly distended; urine loaded with urate; no blood nor pus; leucocytes 60,000 (counted by two different men), pain along right side; costo-vertebral angle tender; Murphy's sign positive. The following day condition slightly improved.

November 28. A few blood and pus cells in the urine; leucocytes 20,000. Patient improved and gradually recovered.

Case 3.—W. L. G., 34 years. March 2, 1917, Claxton, Ga. February 28th. Taken suddenly with pain in the right side; no nausea; no fever. The following day the pain radiated to the groins; abdomen became tense and swollen; the bowels refused to move from cathartics and enemata; temperature remained normal. Later the pain became located in the right iliac fossa.

March 2d. Brought to Savannah; temperature 100; abdomen rigid and distended; pain and tenderness in the right iliac fossa; bowels still refused to move; costo-vertebral angle tender; Murphy's sign present; urine 1040, loaded with urate; no blood nor pus; leucocytes 16,000.

March 3d. Much pain during the night; temperature reached 102; leucocytes 22,000; bowels moved; X-ray finding negative. The patient did not look desperately sick.

March 4th. Urine loaded with blood and pus; temperature 99; leucocytes 16,000. Much improved; uninterrupted recovery and remains well.

This condition is known under a variety of names. In the older pathology with the nomenclature based upon end results found at the autopsy, we find the names of pyonephritis, suppurative nephritis; pus kidney; kidney abscess; surgical kidney, and others, with pyelitis and perinephritic abscess as end results.

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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From a point of view of etiology the condition is a haematogenous infection of the kidney. Frederick Cotton recommends calling the condition septic infarct of the kidney. It brings a less formidable term and better suited for every day use.

The cause of septic infarcts in a few cases is a metastatic deposit from a suppurative focus elsewhere in the body and in these cases the septic agent is similar to the present organism, usually a staphylococcus or streptococcus.

In infection of this kind Cunningham states that both kidneys are involved, but does not present the data upon which he bases his conclusions, while the two cases of metastatic septic infant, reported by Israel, were both unilateral. In the majority of cases of septic infants are produced by the colon bacillus and come from no known lesion, attracting the victim while apparently in perfect health, and in cases going to autopsy, most careful search fails to reveal the source of the infection. In order to make the process fit in with our ideas of pathology, Cunningham assumes a lesion somewhere in the intestinal canal which allows the colon bacilli to invade the blood streams and a hypothetical lesion in the kidney, which affords the bacilli a lodging place.

In Case 2, reported above, there was an intestinal condition which might readily flood the blood with colon bacilli, but similar cases are rare in the literature. With knowledge of the selective properties of bacteria, it is reasonable to assume that the offending bacteria soften the blood from the lower genito-urinary tract and create in the kidney by preference, as this is also a part of the genito-urinary system.

Inasmuch as the disease involves, as a cell, only a portion of one kidney and the portion involved is affected by a multitude of small lesions, it is difficult to explain why the remaining portion of the kidney or the other kidney is not also involved. Cunningham has advanced the plausible theory that the condition comes from a single focus which grows without causing any symptoms until it suddenly breaks through its barriers and fills the terminal arteries in its vicinity with numerous emboli.

The pathological condition of septic infarct, according to Israel, presents five forms:

1. Catarrhal pyelonephritis, with localized areas of congestion and echymosis in the kid-

ney, and secondary infection of the kidney pelvis.

2. Multiple abscess radiating pyramedally from the pelvis. In the acute cases there is much congestion and infiltration about the focal lesion, while in more advanced cases the congestion disappears, leaving the discrete abscesses.

3. Very acute cases, in which there is no time for the formation of abscesses, characterized by congestion edema and echymosis.

4. Chronic multiple abscesses, either discrete or confluent.

5. Abscess formation involving both cortex and pelvis with gangrene of the mucous membrane of the calyces.

Some cases are known to produce perinephritic abscesses and undoubtedly the primary lesion in the kidney often heals, leaving an abscess about the kidney until the primary focus is obliterated.

The symptoms of the disease are peculiarly misleading in that the attack resembles other better known acute abdominal conditions, including appendicitis, empyema of the gall bladder, or rupture of duodenal ulcer. The first symptom is usually pain in the abdomen with an indefinite location, the abdomen becomes tense and rigid and in a right-sided lesion pain; the tenderness is often referred to the right iliac fossa owing to the fact pointed out by Hausmann, that a painful kidney lesion causes a reflex contraction of the psoas in cases of acute appendicitis. Temperature usually rises rapidly after the onset of the pain and may or may not be preceded by a chill. The leucocytes count is high, reading 60,000 in one of my cases, and the whole picture is one of acute sepsis somewhere in the abdomen. The urine is usually negative at first, but after a day or two contains pus and blood. The one characteristic symptom is tenderness over the back on the affected side. These symptoms may be readily overlooked unless one has this condition in mind. The difficulty of diagnosis constitutes one of the chief interests in the condition.

Of the nine cases coming into the service of Brewer in the Roosevelt Hospital, only one was diagnosed correctly. And as keen an observer as Farrar Cobe states that he recognized no cases until his attention was called to the condition by Brewer, although in looking back he is sure he had seen some in his practice. And everybody who has

seen a considerable number of these cases admits having operated upon one or more under a mistaken diagnosis.

Owing to the various lesions presented the treatment of courses differs widely according to the extent and severity of the infection and the proper management requires a thorough understanding of the pathology. A number of cases like the two last reported recover without treatment; and if the symptoms are not too severe and improve after a delay of 24 to 48 hours a further delay is advisable with a good prospect of recovery. Those with an overpowering taxaemia require an immediate nephrectomy provided one kidney is functioning properly. In less severe cases in which the symptoms indicate the presence of a prostatic septic, the extent of the operation depends upon the condition present. The operations recommended are splitting of the capsule and drainage, with nephropexy if the kidney is loose; scraping out of the abscess and drainage; resecting of the portion of the kidney and nephrectomy. Most writers report good results from the partial operation except Brewer whose statistics show five cases of drainage with four deaths and seven cases of nephrectomy with but one death and six recoveries.

In conclusion, I would state that septic infarct of the kidney is of much more common occurrence than is generally believed. The diagnosis is difficult and is not made unless one is on the lookout for the disease. The diagnosis is important, both for the proper management of the case and in saving the patient from a needless operation. The treatment requires a high degree of surgical judgment in order that the less severe cases may have the benefit of a timely and adequate partial operation and the severe cases relieved by a nephrectomy before death occurs from acute or chronic sepsis.

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THE SIGNIFICANCE AND DIAGNOSIS OF CONDITIONS CAUSING BLOOD IN THE URINE.*

By E. P. Merritt, M.D., Atlanta, Ga., Instructor in Genito-Urinary Surgery, Atlanta Medical College (Emory University). Urologist to Georgia Baptist Hospital.

There is no malady so hard for a patient to understand, and none so alarming to him as to see blood in the urine. Well he may be, for, as a rule, blood in the urine is a danger signal worthy of serious consideration. We, as doctors, oftentimes are puzzled to interpret the exact meaning of its appearance, therefore, it behooves us to prepare ourselves as far as possible to know the etiological meaning of hematuria when we see such. This, in all cases, is no easy task. It is my purpose to take up only the microscopical hematuria cases, as it will be impossible in in one paper to cover all of them, only the very important and most common ones in the male.

The anatomical parts of the urinary tract includes the kidneys, ureters, bladder, urethra and its structures. To think for a moment, you will agree with me that we are dealing with very delicate organs, and it is, therefore, easy to start hemorrhage from either mentioned, for the blood supply to each is plentiful.

Conditions causing renal hemorrhages are (1), stone; (2), tumors; (3), trauma; (4), malignant, acute fevers; (5), drugs; (6), tuberculosis. Others less important will not be mentioned.

Stones cause hemorrhage very frequently, although there may be large stones in the kidney and no hemorrhage microscopically. Usually, when there is hemorrhage due to kidney-stone, the symptoms of kidney-stone are present.

The three-glass urinary test would usually show some blood in each glass, more in the

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last. Microscopic examination would, in many instances, show deposits of stone material. X-ray examination is also a great aid to complete the diagnosis, along with the history and physical examination.

Tuberculosis of the Kidney: The urinary glass test would be the same as in hematuria from stone. There would probably be no history of renal pain. The patient would, if disease had progressed, be emaciated and would give general symptoms of tuberculosis. It is very thoroughly agreed upon that kidney-tuberculosis is secondary. This disease usually attacks persons from 20 to 30 years of age, and usually unilateral. In order to complete the diagnosis, the ureter of the affected side should be catheterized, a specimen obtained, examined microscopically, and, if necessary, bacteriologically.

Nephritis oftentimes causes blood in the urine. There may be a very large amount of blood or very little. The microscopical appearance would show as described above. Julius Manneburg, in the following list of forty-three cases of acute nephritis, observed hemorrhage six times; in forty-five cases of sub-acute nephritis, observed hemorrhage five times; in two hundred cases of chronic nephritis, fifteen times. The physical examination and history would be very important plus microscopical findings.

Trauma: As a rule, there would be more blood in the urine from renal trauma than other causes mentioned. There would be a large amount of blood in each glass. The history of the accident would lead to early diagnosis; there in all probability would be mass in the kidney, especially if the ureter should become blocked.

Drugs that cause renal hemorrhage most frequently are cantharides, urotropin and turpentine. Personally, I have seen two cases due to santol oil. The glass test would show blood in each one, less in the first. As a rule in this condition, there is acute renal pain. I know of no better diagnosis than to discontinue the drug, and watch the hemorrhage disappear quickly.

Acute Infectious Fevers:—(a) typhoid; (b), smallpox; (c), scarlet fever; (d), measles; (e), malaria. This type of hemorrhage need not be so confusing, as a rule, as the physician is on the lookout for its appearance.

Ureteral Hemorrhage: There are a few conditions that cause ureteral hemorrhage,

namely, stone, new growths, kinks, trauma, ureteritis.

Ureteral stone hemorrhage will only be discussed here. There is very rarely much hemorrhage due to stone in the ureter and the three-glass test of the urine would be about the same as the renal hemorrhages.

There will generally be a history of characteristic pain along with catheterizing the ureter. Examining specimen from that side and having X-ray picture with iron-oxide catheter in ureter, will in most instances afford a plain diagnosis.

Bladder Conditions Causing Blood in the Urine: Usually in any bladder hemorrhage, where there is a large amount of blood, we get blood in the three glasses equally divided.

Bladder tumors, benign and malignant, cause at times alarming hemorrhage with very little pain, not giving much past history, except previous attacks of bleeding, especially after undue exercise, or natural breaking down of the growth. In bladder tumors the cystoscope is beyond doubt very essential, for with it can be mapped out the size, number, location, etc., by viewing the tumors.

Stone in the bladder may cause hemorrhage or may not, but if there is a large rough-edged stone, usually there is some hemorrhage to be seen, while the urine is thick and full of mucus. Pains are present, which point to the diagnosis. The cystoscope generally shows the stone quite plainly, also stones may be felt with ordinary steel sounds or stone searchers, if in doubt. Frequent desire to micturate is usually present and at the end of urination, an aching or full feeling in the bladder neck is transmitted to the urethra.

Tuberculosis of the bladder or tubercular areas are frequently the cause of hematuria. There is usually very little pain in this condition unless the area be located at the neck or outlet of the bladder. The urine should be examined for tubercle bacilli microscopically, usually a cystoscopic view will demonstrate the presence of minute tubercles, or possibly large ulcerations. There is, as a rule, frequent desire to urinate, both day and night. Blood is not always in the urine from patients with this condition, but frequently.

Other bladder maladies causing blood in the urine that will not be taken up here are, various hyperemias, traumatic congestion and parasitic diseases.

Urethra—The prostatic or deep urethra gives rise to more urethral hemorrhage than the remaining portion.

Deep or posterior urethritis is very common, the three-glass test giving the first two clear of blood, the last few drops of urine passed bring almost blood alone. This condition would call for frequent desire to urinate, with some pain at the end of miction. If it be of infectious type, microscopical examination would give etiologic answer.

Cystitis, Acute or Chronic: The acute type is responsible for blood in the urine more frequently than the chronic cystitis. This causes frequent urination, associated with pains over bladder region, oftentimes rectal pains. In this there would be pus in the urine with mucus, the latter as a rule very plentiful. Bacteria of the invading type would be present also.

The prostate gland causes hematuria, mixed, as a rule, as in deep urethritis. Conditions, causing hemorrhage from it would be hypertrophy, trauma, tumors and inflammation due to infections. A diagnosis could be more easily reached by the aid of the urethroscope, cysto-urethroscope, also rectal palpation.

The verumontanum is a very delicate landmark in the deep urethra, which oftentimes bleeds when inflamed; also polypi cause hemorrhage frequently. The anterior urethra rarely bleeds, except from trauma, growths, irritating strictures or urethritis. The first glass would get the blood from this region. Microscopical study of hematuria should not be forgotten. Many times we see no blood, even though it is present in large quantities which could be revealed with the microscope. Let us study hematurias from every standpoint, for we know there is trouble up the line when we see the red flag of urology so plainly.

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An advertisement in The Journal of the Medical Association of Georgia will bring results. Rates sent on request.

SPECIALIZATION, WHAT DOES IT MEAN?*

W. B. Emery, M.D., Atlanta, Ga.

I hope that in bringing to the notice of this organization the subject, as stated, the members will not think that I speak in a spirit of criticism, or in any way, presume to question the qualifications of the members of our organization who have chosen to specialize.

I am sure there is not a member of our association who limits his practice to a certain class of diseases, who is not worthy to be called a specialist, but owing to the fact that this is a day of specialties and a growing tendency in our profession to specialize. I do not think it is amiss to ask, and attempt to answer, a few questions on a subject which should be of interest not only to the younger member, but to the older practitioner, who is contemplating limiting himself to a special line of work.

The questions are as follows:

When does a graduate in medicine and surgery become a specialist?

Does the mere fact that a doctor announces himself a specialist, make him one?

Does the fact that he limits his practice to a certain class of diseases entitle him to be called one?

Should the fact that his patients insist on calling him a specialist cause him to be classified as one?

Does the fact that he has had a special course in a certain class of diseases justify him in declaring that he is one or entitle him so to pose?

These are some questions I wish to discuss in this short paper, and in trying to answer them, I am aware that the greatest care should be exercised, for one is likely to be misunderstood in attempting to discuss them. It should be handled with gloves on, for every word that is written or spoken, and every thought that is expressed on a subject that has so many kings and angles should be well weighed before being embodied in a paper to be read and exposed to the criticism of an organization of medical men.

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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There are so many shades and phases of the term specialization, that one who attempts to discuss, explain, and elucidate them, is apt to find himself on dangerous ground, and should he insist upon detailing the various degrees of specialization, he is apt to find the subject most complicated.

To be able to write a paper and say nothing on a subject which is so important, and pregnant with such interesting thought is perhaps a "Consummation devoutly to be wished," and from the standpoint of policy, it is better for the writer to say as little as possible, if he persists in saying anything at all.

A definition of a specialist given by most of our accepted authorities is, "One who devotes himself to some special branch of knowledge, art or science, as a doctor devotes himself to certain diseases." We gather from the same authorities that a doctor becomes a specialist, and is rightfully entitled to the appellation, in an ethical sense, when he devotes his practice to a special class of diseases to the exclusion of other lines of medical or surgical practice. But in studying the definitions closely, I find that one of the authorities states that a specialty is "that for which a person is distinguished," and the principal point is this: Is he (that is a specialist) the one to say that he is distinguished, or should this be left for others to acknowledge, and if for others, whom should they be?

Time has shown that the elasticity of our language, that is, the "American-English" language is great. It is elastic to the extent that usage determines the meaning of many of our words, and as some one has said, "Words like material objects cast shadows and the light in which they are shown decide their exact signification.

Usage, in regard to the word specialization, has been kind to the medical specialist. The layman accepts this term blindly, and it is not my desire to weary you by detailing the various conceptions they have of what a specialist consists. I will have nothing to say on what their conceptions are, except, that the ideas they have on the subject are quite frequently at variance with what the medical fraternity should recognize.

I contend that a specialist, in the truest sense of the term, is not born in a day, neither does he come into existence by virtue of a

few weeks' special post-graduate course, devoted to certain lines of diseases. I believe that a real specialist is evolved and attains this state only when his brother practitioners declare him so, and recognize him so to be.

PATRIOTISM WILL TELL.

Much has been said and written unofficially about the possibility of conscripting the medical profession to supply the desired quota of physicians for the immense army that our government is now raising.

Physicians are as essential to the success of an army as munitions and if our troops are to be the deciding factor in the terrible conflict now raging in foreign lands, the surgeon general's office must be supplied with a sufficient number of doctors in the Medical Reserve Corps, to take care of the full complement of troops in the field, on transports, in evacuation hospitals and base hospitals, in concentration camps, etc.

While it is no reflection upon any man's honor to be conscripted, at the same time we feel sure that a sufficient number of doctors will volunteer their services at an early date, which means considerable to the individual so applying.

It is reasonable to suppose that those who volunteer early and receive the benefit of instruction in a medical training camp, will be the ones who will receive the advanced commissions.

Whatever may be the pay, the fact remains that the surgeon general must have at least 20,000 physicians in the Medical Reserve Corps to supply the present demand, and we feel that the patriotism of the medical profession will be the stimulus that will induce a sufficient number of doctors to offer their services voluntarily.

Blanks for commissions in the Medical Reserve Corps are now appearing in medical journals or will be supplied you by the board in your own state. If you do not know the location of this board, the editor of this paper will be glad to inform you or send you a blank upon request.

DO YOU KNOW THAT

The only good fly is the dead one?

Universal public health service is the duty of the Nation?

Much valuable food material is diverted in the manufacture of alcoholic beverages?

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Medical Association of Georgia

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ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

TITLES OF PAPERS FOR THE SAVANNAH MEETING.

The Secretary is ready to receive the titles of papers to be read at the State Association meeting April 17, 18, 19, 1918. It is hoped that the provisional program may be ready for publication in the March Journal. The Scientific Committee, of course, will arrange the papers and have full charge of the program.

PAYMENT OF DUES.

Keep the Man at the Front in Good Standing.

The 1918 dues should be readily collected this year, as we believe there is no valid excuse for any delay. We wish to call attention, however, to the very important matter of every County Society making unusual ef-

forts to keep the members at the front in good standing by paying their dues for them. This appears to be the custom in many places throughout the country.

Macon, Ga., February 1, 1918.

The Journal of the Medical Association of Georgia, Augusta, Ga.:

Through a mistake of substitution of papers an article, "Diagnosis of Foreign Bodies in Trachea and Esophagus," was published as mine and as having been read by me before the State Association.

This correction should have been made earlier, but was delayed by reason of unusual conditions existing at that time.

This statement is made with a view of correcting any injustice that might have been done any one and to express my regret for the unfortunate mistake.

C. L. PENNINGTON.

February 6, 1918.

To the Editor The Journal of the Medical Association of Georgia:

Dear Sir:

On page 199 of the January issue of The Journal of the Medical Association of Georgia, "Discussion of Dr. Osborne's Paper," there occur the words, "and the absorption of the protein is an antiphlogistic (?) phenomena. This develops by an inflammatory condition carried through the circulation by a foreign body protein." This is ALL WRONG! What I did say was, "And the absorption of the proteoin sensitizes and produces an anaphylactic phenomena, this develops and is made evident as an inflammatory condition of the eyes or skin, by the foreign body protein carried to it by the circulation, the antigen?" Please correct it. Thanking you. Very truly,

ST. J. B. GRAHAM, M.D., D.T.M.

BEWARE OF SWINDLERS.

No doubt you may have seen the several notices, under "General News" in the Journal A. M. A., in several recent issues, entitled "Once More a Warning." These refer to swindlers operating in different sections of the country—various letters having been received from victims in Ohio, Colorado and other widely separated states. Now comes a letter from the well known publishing house of W. B. Saunders Company, of Philadel-

phia, saying a man under the name of E. T. Rogers, claiming to represent the University Progressive Club of Cincinnati, for medical and other journals, has been victimizing physicians in Illinois; and the same subscription swindlers, or another under the name of Robert Wayne, has been relieving physicians of their well-earned cash in the region of Gary, Ind. It is believed there is concerted action, perhaps by an organized band, being taken at this time of the year, to victimize physicians on so-called "subscription" schemes. Every physician should decline to pay any money by check, or otherwise, to subscription agents not personally known to him, or for whom other physicians can not vouch. Many of these so-called agents operate under the guise of students "working their way through college."

RULES AND REGULATIONS GOVERNING THE REPORTING OF COMMUNICABLE DISEASES.

The subject of the current bulletin of the State Board of Health is "The Physician's Duty." The bulletin in itself is specific enough to require no interpretation, but it is of such momentous import as to deserve the widest publicity.

In a recent book, entitled "The New Public Health," the fundamental principles of public health administration are restated. The declaration is made in this book that the old Public Health sought the sources of the infectious diseases in the surroundings of man, while the New seeks them and finds them in man himself. Hitherto they had been sought in "every place and everything where they were not," but now they are looked for and found where most obviously they should be looked for—in infected persons themselves.

The importance of the bulletin in question lies in the fact that it authoritatively makes it the duty of every physician in the state to report to the proper county and city boards of health every case of communicable disease that comes under their observation. The law of 1903 is cited as authority for this requirement, and thirty-eight diseases, well known to the medical profession, are listed as communicable and reportable under the law. "The New Public Health" is right in its declaration that it is not the environment, but the individual, that is the immediate source of danger, and the discovery, quaran-

ting and caring for the infected individual the most significant public health work in its requirement, and in one quick stroke Georgia takes front rank in public health work.

Anticipating an objection on the part of some that there are no health boards to whom reports can be made, the bulletin calls attention to the fact that every county has a board of at least two members, the county superintendent of schools and the chairman of the board of roads and revenues or ordinary constituting the board, according to a ruling of the attorney general. It is recognized that in many places these officials are ignorant of their duty and inactive, but no quicker way could be found to arouse them and force them to organize than for the physicians of the county to begin to report their cases of infectious diseases to them.

The ruling of the board became effective January 1, 1918, and specifies that not only are physicians required to report to their local boards, but these in turn should make prompt reports to the state board.

The bulletin bears the indorsement of the governor, who states that "there is no place for the weakling in these strenuous preparations for war," and urges all persons to aid the board in its effort to conserve the health of the people. It also has the indorsement of the State Chamber of Commerce and Georgia State Committee, Council National Defense, Medical Section.

It is to be hoped that every physician will personally accede to this requirement of the board, realizing that, when he does so, his reports are not only prime factors in the state's machinery for the control and prevention of disease, but of the supremest educational value.

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THE DIRECT METHOD FOR REMOVAL OF FOREIGN BODIES FROM THE AIR PASSAGES.*

By J. T. Maxwell, M.D., Savannah, Ga.

In presenting this paper on the removal of foreign bodies from the air passages, it is not my intention to give an exhaustive treatise on such a broad subject, but rather to call the attention of the physicians present to an important surgical procedure which has been developed during the last few years, and to give an idea of the problem involved.

In spite of the fact that articles on the subject have frequently appeared in medical literature during the last ten years, the proper methods of procedure are often not familiar to the general practitioner. The majority of physicians show a lack of interest in the work of nose and throat specialists, and skip over the articles read or

published by them, even though most of the cases come first to the family doctor for treatment and advice.

Until the last few years the work of direct bronchoscopy has been done by only a few men in the large cities. There are several reasons for this. An equipment to do peroral endoscopy properly, costs about two hundred and fifty dollars. And to do this work with only a fair degree of proficiency requires a tremendous amount of time and labor. Dr. Chevalier Jackson, who is the foremost authority on this work in America, states that no physician would be cruel enough to attempt to remove a foreign body from a human bronchus until he had performed this operation at least one hundred times on a living dog, and also many times on the cadaver. With these difficulties in the way, and the probability of only one or two cases a year coming in for this form of assistance, it is not hard to account for the slow extension of this work to the smaller medical centers.

Although patients with foreign bodies in the air passages are comparatively few, when they do come they are frequently ur-

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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gent and distressing cases. Two-thirds of them occur in children who are likely to put into the mouth almost anything that comes within reach. The sudden inhalation which precedes or follows coughing, laughing, crying, or unusual exertion, may carry the object from the mouth into the lower passages. This is particularly likely during sleep, intoxication or delirium.

Almost any small objects, such as seeds, nuts, pins, tacks, buttons, coins, etc., may be inspired. Ripe seeds which may swell or sprout, are urgent cases needing immediate attention, while soluble substances, such as candy, toast, or bread, are not dangerous, as they soon dissolve and are coughed up. Some objects, especially peanuts, may set up a violent action within a few days, while metallic bodies have been known to remain in the bronchi for years without giving much trouble, although, sooner or later, the patient succumbs. Bodies of such shape as to completely occlude a bronchus, if not removed, usually cause a rapidly fatal abscess.

Insoluble objects are sometimes coughed up, but the chances of spontaneous expulsion are small, because during expiration the glottic chink is only partially open even during the expulsive efforts of the cough. Another factor against the coughing up of a foreign body is gravity, that often aids a pin or tack to descend into a small bronchus, below which very little air can be drawn.

The inhalation of a foreign body into the larynx or trachea, is usually followed by a violent fit of choking and coughing. If the object falls into the trachea, the patient may soon feel very comfortable again and have only occasional coughing spells, or even none at all. The passing of the cough may lead the patient to believe that he was mistaken, and that nothing was inspired. The writer has now under observation a man who has undoubtedly inspired a piece of toothpick an inch long. But since the coughing, which lasted several days has subsided, the patient insists that there can be nothing in his lungs. On the other hand, it is common to find persons who insist they have a foreign body in the air passages, when none has ever been there. The X-ray is our constant companion in this work, when the foreign body is composed of substance impervious to the ray. The stethoscope is also valuable as a diagnostic measure. Any case

in which there is a clear history of the patient having choked on a foreign body which was not afterward found, should be examined. If the foreign body is shown by the X-ray, the indication is clear, otherwise an exploratory bronchoscopic examination should be made.

The choice of instruments used varies with different operators. They all consist of straight tubes through which forceps, sponge holders, and other appliances may be passed directly into the larynx or trachea. Far more depends on the individual skill of the operator than on the instrument used. The detailed description of the several styles of instruments will be discussed in another paper at this meeting. Those designed by Jackson, which are lighted at the distal end by a tiny cold tungsten electric bulb, seem to me to be the most practical. Before passing instruments for direct inspection every case should be examined by the usual indirect method with the laryngeal mirror, since a somewhat different view is used for inspection of the vocal cords, and a better view of the anterior wall of the larynx is obtained.

In all bronchoscopic work the patient should be prepared much the same as for any other operation. Artificial teeth should be removed, and if possible the patient should be fasted for five hours, in order to prevent vomiting. Except in emergency cases, a careful examination should be made of the general system. At one time a general anaesthetic was considered necessary to do peroral endoscopic work, but now no anaesthetic at all, or local anaesthesia by cocaine is the usual method. Especially in children the cough caused by contact with the tube in bronchoscopy lessens after a short period. Following the general rule in surgery, an anaesthetic should never be used at all unless necessary, and then in as small a quantity as possible. The operator who can prevent apprehension, and keep his patient's mind fixed on the task of breathing slowly, deeply and regularly, will get along without any anaesthetic better than he will with profound general anaesthesia.

In applying cocaine, the lower part of the pharynx may be rubbed over with an 8 per cent solution by means of a curved applicator without a mirror. Then after a few minutes, the laryngeal speculum is introduced and a 20 per cent solution is applied by means of a sponge holder to the

anterior and posterior surface of the epiglottis. Then gradually deeper applications can be made to the interior of the larynx and trachea, great care being taken not to have the swab too wet and thus apply sufficient cocaine to produce toxic effects.

Better work can be done in the recumbent position, in both children and adults, because of the greater ease with which secretions and foreign bodies are removed without the opposition of gravity. In the erect position the foreign body may reach a deeper point in the air passages than it would in the recumbent position. When foreign bodies are in the larynx they should never be touched unless the patient is in the Trendelenberg position. The slightest touch may dislodge them and they may fall into the trachea or bronchi. It must be remembered that the trachea is not perpendicular to the long axis of the body, but passes backward and downward following the general direction of the thoracic spine. Therefore, if we throw the patient's head backward, we cause an anterior convexity of the cervical spine, and also the trachea, so that the bronchoscope being straight will strike against the anterior wall of the trachea. The correct position is produced in the recumbent patient by keeping the occiput on a level with the table, and extending the head at the occipito-atloid. This is known as the Boyce position, and keeps the trachea straight.

The first procedure is to pass the laryngeal speculum. The tongue of the patient need not be held out, and the mouth need not be gagged wider open than is necessary to admit the instruments. The teeth may be held apart by what is sometimes called a bite block. The direct laryngeal speculum is grasped by the left hand, leaving the right for the manipulations of forceps. The speculum is passed in the middle line over the tongue, until the epiglottis comes into view. The tip of the epiglottis must pass under the spatular end of the speculum for a distance of about one centimeter, at the same time raising the distal end of the instrument in the direction of the hyoid bone. This brings the larynx into view. Failure to expose the epiglottis is usually due to too great haste to enter the speculum all the way down.

When the bronchoscope is to be used, it is passed through the laryngeal speculum to the bronchoscope, and the bronchoscope is

advanced until the inner end approaches closely to the glottis with the slanted end in the median line of the glottic chink. It should then be passed through at the moment that an inspiration starts. Very little force should be used, because if the bronchoscope does not go through readily, either the tube is too large in size, or it is not correctly placed. If the bronchoscope meets with much resistance a smaller one should be chosen, since care must be observed to produce no trauma. When two or three tracheal rings have been passed by the point of the bronchoscope the laryngeal speculum may be turned sidewise and removed.

After the bronchoscope has entered the trachea the secretions should be removed at once by a gauze sponge on the end of a sponge holder. The sponge may be passed beyond the end of the tube when the secretions will be coughed into the lumen. They may then be drawn out in front of the sponge which acts as a piston. The greatest care should be taken to keep the field clear so as to be able to detect the foreign body and avoid pushing it farther down. The grasping of a foreign body with the long forceps through the tube is a purely mechanical problem which might seem easy at first thought, but the beginner will find it extremely difficult until after considerable practice.

When an object has been observed the manner of drawing it out will depend upon its size, nature, position, etc. Each case is a study of itself in this respect, and the result will depend largely upon the mechanical skill of the operator. Small bodies may be drawn into the tube, while other larger ones may be pulled up to the end of the tube when the foreign body, bronchoscope and all, are drawn out at once.

Since foreign bodies in the tracheo-bronchial tree almost invariably cause death sooner or later if they are not removed, the importance of this branch of surgery should not be overlooked.

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PELVIC PATHOLOGY AS THE CAUSING FACTOR OF HYSTERIA IN THE FEMALE.*

By Dr. Marion T. Benson, Atlanta, Ga.

In recent literature, I have noticed that some internists have taken occasion to abuse Gynecologists and Surgeons in operating upon hysterical women. Some have gone to the extent of criticizing very severely men in this line of work. I think myself we should be very conservative in surgery and not operate except in cases where operations are indicated and where a benefit to patient can be assured. Surgeons and gynecologists have brought criticisms upon themselves to a certain extent in too radical operations, but where the cause is in the pelvis, medicine will not relieve these cases, and I will have to differ with some internists who claim that hysteria, which is caused in many cases by some pathological condition of the pelvis, can be cured with medicine. The old Greeks ascribed the disease to the vague desires and wanderings of the womb, after which they named it.

Hysteria should be classed as a symptom more than a disease. This condition is found chiefly in young women. If we go into the case thoroughly, in a great majority of the cases, we will find pelvic disorders a frequent cause.

From the beginning, it seems that writers associated hysteria with the female organs. We have often heard the remark, "There is nothing the matter with her but hysterics," and the old method of administering a dose of apomorphine and not going into the case thoroughly and finding out what is causing the hysteria, in the opinion of the essayists, there has not been greater mistakes made. Every case of hysteria in the female should be given a thorough gynecological examination. Preceding all treatment, there should be a very careful pelvic examination. The diagnostic study should extend to all pelvic organs, as I will show in the following cases, in which these patients were all suffering from hysteria, and which after operating upon the organs causing the hysteria, all recovered and are now enjoying good health with all the hysterical symptoms removed.

I do not intend to go into the etiology, symptoms or diagnosis of this trouble, nor am I treating this condition from a standpoint of a neurologist. We should, as gynecologists, treat the vast majority of these cases from a gynecological standpoint and the results, as far as I have been able to observe, are very gratifying.

The following cases have been selected from my records. I could cite numerous cases, but the few following will prove my contention that we will be able to relieve these cases only from surgical interference.

CASE ONE: Miss P, age 22 years (mill operator), referred to the Georgia Baptist Hospital. Past history, negative, except that she had been operated upon about eighteen months previous for some ovarian and tubular trouble. Could not get any history about this except after the operation she was in bed about three months with a discharge of pus from abdominal incision.

PRESENT HISTORY: Complaints of jerking with pain in right leg, coming on every afternoon about 4 p. m. This leg and both arms and hands would draw. She had to give up work about six months previous to my seeing her, on account of these attacks. Patient was kept in hospital about one week under observation and she would have one or more hysterical attacks during the day, especially about 4 p. m.

PHYSICAL EXAMINATION: Heart, lungs, kidneys and blood negative—abdominal scar, medium line with adhesions from old drainage. Patient very stout. Local examination on account of obesity revealed nothing of importance. Patient was operated upon more for exploratory examination on June 5, 1916. Mesentery and intestines were attached to line of old scar. Intestines attached to right ovary which was enlarged and cystic, with involvement of right tube. Upon pressure of the right ovary and tube, the right leg would draw up, even under the anaesthetic. Salpingo-oophorectomy, left oophorectomy, appendectomy and relieving adhesions. The previous operation had removed half of left ovary. Patient made uneventful recovery, went home June 26th. Have had several reports from her and she has not had a return of the hysterical attacks—was able to go back to work in about two months, and when last heard from was working every day.

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CASE TWO: Miss R. W., age 20, one of five children—three brothers and one sister. Family history negative—brothers strong, healthy men; sister two years younger, strong and healthy. Patient had usual diseases of childhood with no severe illness. Had been treated two years by osteopath for lump in right side of abdomen and nervousness.

PRESENT HISTORY: Three years ago silly feeling came over her, which she described as being "dead like." About a year before I saw her, was unconscious for a day with pain in head. Attack comes on week before and week after menstrual period. Menstruation very painful; would have to go to bed during this period. Usual hysterical symptoms of drawing of hands, limbs and head. Patient would have difficulty in getting breath; head and arms during convulsive attacks thrown about in irregular manner. Leukorrhea very free.

PHYSICAL EXAMINATION: Heart, lungs, kidneys and blood normal. Abdominal examination revealed a floating right kidney. Pelvic examination showed mass on left side. Diagnosis: Cystic left ovary. Patient operated upon, D & C salpingo-oophoritis appendectomy (appendix bound down), right kidney suspended. Patient made uneventful recovery; was able to return home in South Georgia and since then has improved in every way. Hysterical attacks disappearing, and so far no return except a slight nervousness.

CASE THREE: Miss W., age 20, daughter of a widow; for the past several years working at telephone exchange; father died several years ago, and she had to work to help support the family. Family history negative. Patient had the usual diseases of childhood.

PRESENT HISTORY: Convulsive attacks coming on every few days; would fall in the street or elsewhere when these attacks occurred. Body would become rigid; no laughing or crying in these attacks, but a sensation of constriction in the neck and head jolting back; painful sensation in the lower pelvis, these attacks becoming more frequent and interfering greatly with her work.

PHYSICAL EXAMINATION: Heart, lungs, kidneys and blood normal. Pelvic examination revealed mass on right side. Diagnosis: Cystic ovary; operation advised. Patient was operated upon; thorough D. &

C., with removal of right ovary. Patient recovered and since then has not had a return of hysterical condition.

CASE FOUR. Miss B., age 18; family history negative; one of five children; father and mother healthy; sisters and brothers healthy.

PRESENT HISTORY: For the past two years has been having hysterical attacks, especially at menstrual periods, though these attacks came on any time during the month, upon the streets or elsewhere; had to give up school on account of these attacks. Physical condition good; healthy robust girl; apparently the picture of health. Physical examination of organs normal; pelvic examination normal. D. & C. was advised, which was done, and since then no hysterical attacks. After D. & C., patient was put on ovarian extract and tonic. For the past several months she has been perfectly normal.

CASE FIVE: Mrs. T., age 21. History: Father and mother gave a negative history, except both were nervous and excitable. Mother had borne three children, all healthy and free of hysteria. Patient married when 16 years old, two babies about 18 months apart; during first pregnancy showed aluminum. During last months of first pregnancy edema in lower limbs quite severe; had to be put to bed and kept there for two or three weeks on account of same; forceps delivery with severe lacerated cervix. Second confinement normal except for extreme nervousness. About six months after second baby was delivered, patient became extremely nervous, afraid to go out alone, finally becoming violent, imagined hearing voices and talking to same; seeing objects, etc. She became violent, the children had to be taken away from her and furniture had to be removed from the room, as in these attacks she would try to break up the furniture and injure herself; would have several convulsive attacks during the 24 hours; some more violent than others. Patient had shown no marked hysteria until after first confinement.

I advised repair of cervix, which was refused on account of fear of hospital, but as these attacks became more severe, family consented to the operation. Examination showed badly lacerated cervix of the stellate variety, which was repaired. Patient recovered with good results and was soon able to resume her household duties. Nervous-

ness to a marked extent disappeared, with hysterical symptoms also disappearing. She was soon normal and able to care for her children, and has not had a return of the hysteria during the last two years and has been delivered of the third child without tear. She is perfectly normal, and in good health at the present time.

Suite 504 Atlanta National Bank Bldg.

NOVOCAIN IN SURGERY.*

By W. A. Selman, M.D., Atlanta, Ga.

In presenting this paper, I wish to include the case reports of a former paper on this same subject printed in the Journal Record of Medicine, August, 1915, together with my subsequent cases, and to call attention to such things concerning Novocain regional anaesthesia as will probably be of interest to those of you who are doing surgery.

The history of local anaesthesia is full of interest, and represents the careful observations and experiments extending through many years. However, not until recent years has there been discovered a local anaesthetic that meets all requirements of efficiency and safety.

Novocain, introduced by Einhorn in 1905, represents the highest attainment in local anaesthesia at the present time, having largely displaced many of the older preparations.

Quoting from Volume 53, Annals of Surgery, Hirschel in his book remarks that Novocain "satisfies all the demands which Braun postulates for a local anaesthetic, namely, that the latter should be less toxic than cocaine proportionately to its local anaesthetizing power, that it should not cause any damage to the tissues, that it should be soluble in water and easy to sterilize when in solution, and, finally, that it should be capable of being combined with some adrenal preparation."

So popular has this anaesthetic become that in many of the large clinics of Europe and America, it has almost replaced general anaesthesia for certain operations. According to Professor Wilms, the Herdelberg

Clinic, which is known for its large proportion of abdominal operations, in the year 1912, 54 per cent of all operations were done under local anaesthesia.

The low index of toxicity, the absence of any tendency to habit formation, the immediate anaesthetic effects upon the tissues, and the possibility of massive infiltration of the tissues, all tend to make it the anaesthetic of choice in many operations, and as a lesser evil in many more where a general anaesthetic would add to the hazard.

Novocain is soluble in water one to one, and produces complete anaesthesia, in most cases, in dilutions of 1 to 400. In this strength ten or twelve ounces may be injected with safety, where no idiosyncrasy exists toward it, and, personally, I have not encountered such a case. It can be sterilized by repeated boiling, and, according to Allen, will last several months without deterioration.

Good as it is alone, it is better combined with adrenalin chloride. The remarkable agent, called by Allen "the therapeutic constrictor," in a strength of 5 m. of a 1-1000 solution to one ounce of the novocain solution, will render capillary oozing a negligible factor, and prolong the effects of the novocain to fully one hour.

To obtain uniformly satisfactory results it is desirable that the mental condition of the patient be in a quiet, receptive state, and the nearer this approaches to a soporific effect, the better. To do this, where there is no contraindication, scopolamine gr. 1-150 and morphine gr. 1-6 act admirably, given about one hour previously, and an additional hypo of morphine gr. 1-4 or 1-6 just prior to beginning the operation, especially if there is a tendency to nervousness. Each of these drugs is given for a purpose—the morphine to dull the pain, and make the "lamp of life burn slower"; the scopolamine or hyoscine, for its somnolent effect; the adrenalin chloride as a local and constitutional vasoconstrictor, and the novocain for its local anaesthesia.

When an operation attempted under local anaesthesia is liable to reach some magnitude or where the abdominal viscera are involved it is highly important to have an anaesthesia in readiness to help with gas-oxygen or an ether anaesthesia.

No special make of syringe is necessary. However, an all-glass syringe of 5 or 10 c.c. capacity with a ground glass plunger and

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slip-on needles is very desirable. It is very satisfactory to have a small sharp needle for the intradermal injection. This wheal must be subcuticular, the full length of the intended incision before the subcutaneous infiltration is attempted. Then by a systematic, thorough infiltration of each tissue before cutting it, remembering that the blood vessels as well as the nerves are highly sensitive, a sharp dissection can be painlessly done with a minimum of shock.

Some of the benefits of local anaesthesia are:

1. It is unnecessary to starve a patient beforehand.
2. No post-operative nausea or vomiting.
3. Dilatation of the stomach, intestinal paresis, and tympanites are largely eliminated.
4. A more rapid convalescence, as post-operative nourishment is not interfered with.
5. In cachectic, feeble, aged, arterio-sclerotic, advanced cardiac, pulmonary, renal or hepatic disease, and in alcoholics—either alone or in combination with light general anaesthesia, through its anoci-association—it is a great adjunct to general surgery and a blessing to humanity.

The operations that lend themselves most adaptably to local anaesthesia are herniae of various kinds, varicocele, hydrocele, many rectal conditions, resections of ribs in empyema, etc.

In no class of surgery is a knowledge of anatomy more essential, and at no time will tact and versatility be at a greater premium in gaining the confidence and co-operation of the patient. And truly, in the words of Sir Berkeley Moynihan, "The scalpel is indeed an instrument of most precious use—in some hands a royal sceptre; in others, but a rude maddock."

Besides my previously reported novocain operations, I wish to mention the following cases:

Ten herniotomies, including two strangulated, two double, and two congenital. One of these, a strangulated femoral hernia in a woman, was of special interest. The strangulation included both the omentum and about six inches of the ilium. Both structures were gangrenous, forming a mass about the size of a fist, and the intestine already ruptured. The only anaesthetic was a hyoscine, gr. 1-150 and morphine, gr. 1-4 one

hour previously, and a second, 1-6 gr. morphine just at the beginning of operation. A thorough novocain infiltration was done, and the patient slept quietly through it all. The omentum was pulled down and the gangrenous part resected. The intestine was anastomosed end to end by means of a Murphy button. This is the tenth day after operation, she had no shock, is not running a fever, and is apparently well on her way to recovery, though she has not yet passed the button.

During the past three months in the surgical service at the Grady Hospital we have done four resections of ribs for empyema, four varicoceles, one orchidectomy for sarcoma of the right testicle, and one hemorrhoidectomy—all with practically no pain to the patient.

As an illustration of how well local anaesthesia acts through its anoci-association, in combination with gas and oxygen, I relate one other case.

On April 17th, I was called to see "Mrs. B.," age 68, who had eaten heartily the day previously at the celebration of her golden wedding. I found her with typical symptoms of gall bladder colic and advised surgical relief. She wished to wait one day and in the meantime have her family physician, Dr. J. D. Middlebrooks, of Powder Springs, Ga., see her in consultation. This was done, and an immediate operation advised. With a preliminary hyoscine and morphine injection one hour before the operation, she went to sleep on the operating table during the novocain anaesthesia of the abdominal wall. She, being a two-hundred-pound woman, a long incision was necessary. The anaesthetist, awaiting with the gas and oxygen ready, saw the patient sleep right on through the packing around and opening of the gall bladder. Thirty-three stones were removed, and the fluid and pus contained within it, was under such tension that when it was incised with the scissors between forceps, as many as a dozen stones were thrown out on the gauze packing. Two large stones the size of hickory nuts were impacted and required considerable pulling and lugging on the gall bladder. Not until this was done did the patient complain, and then the gas oxygen was administered during the rest of the operation. No nausea or shock resulted. She left the table with a pulse of 80, and her condition was entirely satisfactory, and the gall bladder is draining freely.

BENEFITS, LIMITATIONS AND DANGERS OF ARTIFICIAL PNEUMOTHORAX.*

By E. C. Thrash, M.D.

Artificial pneumothorax, like pulmonary tuberculosis, has not received attention at the hands of medical men which its importance demands. Its original purpose was to deflate and compress the lung so that the latter would be kept at rest in order that it might heal. It was first attempted by Forlanini in 1894, and was done first in America by John B. Murphy in 1898. The process for producing it at that early date was so crude, and the operative procedures instituted to accomplish it of such a serious nature that but little effort was made to follow up their work until the technic was simplified. Their method was to make an incision, open the pleura and introduce the gas through this opening. On account of the necessity of frequent administrations in each individual case in order to accomplish satisfactory results, this procedure was impractical and was abandoned.

Various kinds of appliances have been devised by different operators, most of which produce satisfactory results. When I began this method of treatment in 1910 there was no apparatus with which it could be carried out with safety and facility. I devised one which was demonstrated before this Association several years ago, and it has served my purpose so well that I have made no effort to change its structure.

Nitrogen gas has been rather universally chosen on account of the slowness of its absorption and was thought to hold the lung compressed for a longer period of time than air. Air, however, serves the same purpose since 80 per cent of this gas is nitrogen and one gets a fair quality of the latter even though all of the oxygen is in a few weeks absorbed. If nitrogen is preferred it can be produced by putting two or three hundred cubic centimeters of water in the generating chamber of the pneumothorax apparatus, and adding ten grams of sodium nitrite and five grams each of potassium bichromate and ammonium sulphate. This solution is heated gradually and the gas passes over through

the washing chamber into the container, from which it is administered to the patient. The container is arranged so that the gas can be kept until it is all used.

Benefit is brought about both by putting the lung in an inactive state which gives it a better opportunity to heal, and by producing an irritation, as any foreign substance will do, causing an increase of blood supply to the lung. This blood finds, not only, inert foreign substance to remove, but also tubercular processes, and these processes being constantly bathed in fresh blood brought to them by dilatation of vessels have their opportunity for progress diminished.

Cases must be carefully selected for this method. The earlier its administration is instituted the better will be the results, and all tubercular cases which do not yield to treatment by ordinary methods should be given the benefit of this procedure if it can be successfully instituted.

In the first stage of tuberculosis it may be administered, even when both lungs are affected, by treating one lung at a time. If the disease is moderately advanced those cases should be selected for its use where the greater amount of pathology is in one lung. One can never know positively if this treatment can be given successfully until the trial is made, because, if adhesions are extensive it is impossible to bring about a satisfactory compression. No case of pulmonary tuberculosis ever becomes moderately advanced without there being more or less adhesions, and the nearer the surface the processes are the more extensive these will be.

When everything is in readiness the patient is placed upon his side with the diseased lung upward. The whole area of the lung is percussed and auscultated. That area which shows the least evidence of disturbance should be selected for puncture. I have tried several kinds of needles, some of which have been patented, but none are equal to the ordinary hypodermic needle of eighteen to twenty gauge, and about one and one-half inches in length. After applying iodine or some other antiseptic solution to the skin, the ribs are pressed apart with the thumb and finger and the needle is easily thrust through the chest wall and the pleura. If this is done carefully one can feel the needle pass through the parietal pleura. The tube connected to the manom-

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eter is then slipped over the head of the needle, and if its point is within the pleural cavity the manometer will oscillate with each breath. This is rather conclusive evidence that the needle is within the cavity, but before allowing the gas to flow, the tube connecting the needle with the manometer should be occluded. The water should then be turned on to the manometer sufficient to cause eight or ten centimeters of water pressure. Then the tube leading from the water tank to the manometer should be occluded and the latter connected again with the lung by opening up the tube attached to the needle. When this is done the manometer should immediately drop back to its original position when it was first connected with the thorax and the fluid again begin to oscillate at each respiration. If this precaution is taken one will be able to guard against the serious accidents that have happened in the past. The gas should now be allowed to flow with a degree of rapidity in proportion to the feeling of the patient and pressure it produces as the flow continues. If there are no adhesions one may administer from one to two thousand cubic centimeters at the first sitting with entire comfort to the patient. If adhesions are extensive, pain may be caused by the first one or two hundred cubic centimeters, and the manometer may show a rapid rise. In such instances the treatment at this sitting should be discontinued. This small amount of gas will form a cushion between the parietal and visceral pleura and separate the adhesions so more may be administered next time. High pressure and pain should always be a signal to stop the flow of gas. What might be termed a high pressure is ten to fifteen centimeters upon the manometer.

Treatment should be repeated at intervals of two or three days at first, lengthening these intervals from week to week in proportion to the degree of pressure and should cover a period indefinitely, ranging from six months to two years. After one or two months' treatment, however, when compression has been thoroughly established, just enough gas should be administered to take the place of that which has been absorbed, and once a month will usually suffice for treatment if there is good compression. One acquires the power of absorbing this gas more rapidly as time lapses after beginning its use, but where sufficient amount has been administered to compress the lung complete-

ly it will require a period of six months or a year for all the gas to become absorbed. After absorption does take place there is usually a complete adherence of the lung to the chest wall and the former gets in a state of fibrosis, and does not open up and become a useful lung as is usually supposed, although some of the structure is restored to normal functionation.

No attempt should ever be made to compress the lung in far advanced tuberculosis for the purpose of closing up cavities unless the free lung is in a fairly good state of health. Should too much gas be administered and the breathing show evidence of embarrassment the apparatus can be reversed and the gas drawn out. After having given this treatment several thousand times upon as many hundred patients, it is my opinion that not more than ten to fifteen per cent of the moderately and far advanced tuberculosis cases are suitable for its use. If these are properly selected all will be benefited, while many will be apparently cured.

The dangers in the application of this remedy are many, and I have made a special effort to find them all. The three most important ones are gas oedema, gas emboli and heart embarrassment. Gas oedema is caused by having the point of the needle in the tissue instead of in the pleural cavity or the gas leaking into the tissues from the pleura through the needle puncture. When this occurs gas passes into the meshes of the tissues quite freely and pervades areolar tissue in every part of the body. If there is only a small amount it will remain around the thorax and in the fascia of the neck. If as much as one hundred cubic centimeters goes into the tissues it will find its way to every part of the body, even around the ankles and under the scalp. This is rather an embarrassing complication, but it is not a dangerous one. If there is as much as two or three hundred cubic centimeters of gas that finds its way into the tissues it can be collected by massage in an area where there is areolar tissue and a puncture made, or a large needle thrust into the skin through which the gas will pass out freely. This is a complication, however, that will rarely arise if proper precaution is used. In all the cases I have treated I have never had but one of serious gas oedema, and that was due to the gas passing out of the thorax

through a needle puncture of an ulcerated pleura.

If the needle is within a vessel and the gas is turned on death will almost certainly ensue. If the needle is within a pulmonary vein the gas will be distributed to all parts of the body, producing emboli of the brain which, of course, would be fatal. Should the needle be within a pulmonary artery danger would be in embarrassing respiration and causing an infarct that might later produce septic pneumonia. The heart should be examined carefully in every instance before this mode of treatment is attempted. If there is any organic lesion, either muscular, pericardial, endocardial or valvular, the treatment should either not be used at all or with great caution. As the mediastinum yields readily, the heart may be embarrassed by its flating either side of the thorax, but there is more danger in treating the left lung.

One great danger is introducing gas into the thorax where there are extensive adhesions posteriorly and no adhesions between the lung and pericardium. In this instance the bulk of the gas will collect between the lung and pericardium, the lung being adherent can not yield, so the pressure is brought to bear upon the heart, producing embarrassment in proportion to the amount of gas administered. If one is not looking out for this he may produce a shock so profound that the heart will not be able to withstand it. Murphy refers to shock produced by puncture of the pleura, but in my experience this is negligible, and I am convinced that instead of getting this pleural shock, as he called it, he produced a cushion of gas between the pleura and pericardium and interpreted the symptoms incorrectly.

In conclusion, I will state that the remedy is sane, practical, and one of the few means that we have of benefiting tuberculosis. The dangers mentioned will happen only to those who do not master the technic thoroughly and who go at it with the idea that it is a simple procedure and requires but little thought and care. If the same knowledge is applied in doing this operation that is necessary for a serious one, and the same care practiced in its execution, one may administer it for a lifetime without a fatality.

DISCUSSION OF DR. THRASH'S PAPER.

Dr. A. H. Bunce (Atlanta): I would like to say that I have had opportunity to observe a number of patients treated by Dr. Thrash by this method. The apparatus which he has devised works perfectly. There is no doubt about it, it produces results in a great many cases that have not been treated by other means. Some of the most striking results are in cases where all other known methods of treatment have been carried out, and the patient is gradually getting worse. I have seen some cases that were sent to the doctor expecting to die, who were able to get up and walk around—not cured, but able to go about their business. It is most valuable in the treatment of tuberculosis. Of course, it has its limitations, but it is one of the most valuable methods we have.

CASE OF EPITHELIOMA OF THE POSTERIOR PHARYNGEAL WALL, CURED BY THE ELECTRO-CAUTERY.*

By Dunbar Roy, M.D.

Mrs. R. B. B., age 27, consulted me on July 29, 1913, on account of an ulcer on the posterior wall of the pharynx. Family history was absolutely negative. Personal history: Had always enjoyed good health. No signs of cachexia or physical weakness. Syphilitic history was entirely negative, and this was true of the husband who was closely questioned. Never suffered with her throat previous to the present attack, except an occasional tonsillitis. No history of traumatism of the throat by caustics or otherwise.

For the last three months she had suffered with a throbbing soreness in her throat that was present almost continually. Had been treated during this time by another laryngologist who used various remedies without success. Finally told her there was an ulcer which failed to heal and in fact was getting larger all the time.

Examination showed a healthy looking woman with no signs of enlarged lymphatic glands in the neck. On looking into the pharynx there was seen some enlargement

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of the faucial tonsils, but otherwise healthy in appearance. At the center of the posterior pharyngeal wall with the upper half hidden by the soft palate there was seen a perfectly round ulcer almost 1 1/2 inch in diameter with a clean cut border separating it from the surrounding healthy tissue. The whole ulcer was yellowish gray granular looking in appearance and apparently 2 or 3 mm deep. By palpation the edges were rather firm and elevated giving the ulcer a somewhat crater shape. It seemed to dip into the pharyngeal aponeurosis. There was some pain on deglutition, but mostly a throbbing sensation. A syphilitic ulcer was the first impression made with a possibility of its being tubercular in origin. Questioning elicited the fact that she had already been taking mercury and the iodides. A piece of the ulcer was removed with Hartman's punch forceps and submitted to a competent pathologist for immediate report. Frozen sections were made and his report was as follows: "The specimen submitted to me shows it to be a typical epithelioma of the mucous membrane."

Two days later under cocaine anesthesia the writer undertook to destroy the ulcerative growth by the use of a sharp point of the electro-cautery. A deep burning incision was made entirely around the ulceration, about 3 mm to the outside of the rim. All tissue within this ring was then cauterized as deeply and as thoroughly as possible. Sufficient time was taken to see that every oint in this area had been touched by the cautery point. There was considerable pain for the first thirty-six hours after which all discomfort began to subside.

An emulsion of orthoform was given as a local analgesic. There was very little reaction. The cauterized area began to heal and contract so that in two months there was nothing remaining but an area of white scar tissue. This gave no inconvenience, and the patient has remained thoroughly comfortable. Only one application of the cautery was made and at no time did the patient complain of pain during the operation. She was examined about the middle of April nearly three years after the operation and there are absolutely no signs of a recurrence.

Unfortunately clinical observers and writers have been too prone to classify all malignant growths of the pharynx under that

general term without distinguishing between the different forms of carcinomas and sarcomas. For clinical purposes such may be sufficient, but as an aid to their treatment and probable prognosis it is very necessary for the laryngologist to distinguish between these malignant growths whenever this is at all feasible. In the large majority of cases the word "cancer" is supposed to embrace all malignant growths and unfortunately this term is too often accepted in our clinical reports. This statement is made because in looking up the literature on the subject of this paper the writer found it almost impossible to corollate all the cases recorded, in that many of them were reported in the most unexpected places and not under any of the headings where one would expect to find them. Furthermore, as Morrell McKenzie and others have pointed out, the disease is often so extensive when first examined that it is impossible to tell its point of origin. Since the tendency whenever found in the pharynx is to upward extension, malignant growths are apt to be reported under the naso-pharynx, tonsils, tongue, esophagus, etc. It is surprising how very superficially this subject is treated in the various text-books on laryngology. All of the authors seem to be of the opinion that since malignant growths are rarely seen in their early stage, but usually after they have involved the various portions of the pharynx, larynx and hypo-pharynx, it is unnecessary to ascertain their true pathology because so little can be accomplished for the patient. In fact, Dr. D. B. Kyle, who has discussed the subject more thoroughly than any other author of a text-book, has this to say: "The treatment is largely palliative, as no radical operation can be successfully performed." Of course, he means those carcinomatous and sarcomatous growths where the surrounding tissue is infiltrated together with the lymphatics and where it would be utterly impossible to eradicate the growth. But simple epitheliomatous ulcers may occur in the pharyngeal cavity which can be successfully destroyed by the electro-cautery, and where the prognosis is not quite so grave as in other forms of malignant growths.

The writer has been unable to find a case similar to the one here reported. As was stated above, all writers speak of malignant growths meaning carcinoma as well as sarcoma. The only case found in the literature

which is at all parallel is the one reported by Henri Aboulker (1) from the hospital in Algiers. This was a case of epithelioma in a man 60 years of age, which had invaded the left half of the velum, extending to the tonsillar region, to the lateral part of the base of the tongue and to the lateral wall of the pharynx, who was operated upon by pharyngectomy and who remained cured three and one-half years after the operation. This writer says that in 7 out of 11 cases of bucco-pharyngeal epithelioma his results had been successful. He also makes the interesting statement that Kronlein's statistics give 39 per cent of deaths from operation; Czerny 39 per cent, Vallas 37 per cent. Aboulker states that these are practically the only series of such operations which have been published. He believes, in brief, that out of 100 patients operated upon, 60 survive at the end of six or three months, or even granting that they all die they have lived as long as the patients who are not operated upon. Their end is not as horrible as that of patients left to themselves. It is not the intention of the writer to discuss the prognosis and treatment of malignant affections of the pharynx, nor to give any statistical presentation. This has been very thoroughly accomplished in articles by Prof. G. Ferreri of Rome (2) and Chevalier Jackson (3). The article by Ferreri is very complete and well worth reading, because of his eminently conservative radical treatment of this subject. Under the surgical treatment this author cites Trelat as declaring that it is useless to intervene in the case of epithelioma of the pharynx. He believes that electrolysis offers the best chances for the patient.

Jackson in reviewing the subject has this to say: Primary carcinoma of the nasal fossae is rare, yet most rhinologists of considerable experience have seen them. Primary carcinoma of the naso-pharynx is so rare, judging from the fewness of reports, that but few rhinologists have even had one case. A careful search of the various indexes of the medical journals published in French, German, English and Italian during the last twenty years had failed to unearth more than fourteen cases. It is probable, however, that some reports have not been found; others have doubtless escaped because buried under misleading titles. Cases primary in the tonsil, nasal fossae, antrum and brain, probably have been reported, if at all, as of

those regions. Politzer mentions five cases where the eustachian tube was involved by cancerous extension from the tongue and the superior maxilla, but none of these seem to have been primary in the naso-pharynx. It scarcely seems possible that all medical records should contain so few as fourteen cases of carcinoma of the naso-pharynx, yet Moritz Schmidt, in a total of 32,997 nose and throat patients, did not meet with one case, though 75 of laryngeal carcinoma were seen. Reports of five cases were collected by Bosworth, in 1889, to which he added one of his own observation. To these I have added eight, including one of my own, making fourteen in all, tabulating them as well as the incomplete report would permit. The table is incomplete, because five of the cases were evidently not under observation to their termination, and consequently only record symptoms to a certain stage. All of the cases were primary in the naso-pharynx, with the possible exception of Latzbeck's, in which the naso-pharyngeal portion was discovered at the autopsy."

The treatment is considered under: (1) radical (operative), and (2) palliative (cold snare; cutting forceps, curette, electrolysis, galvano-cautery, laetic and nitric acid; "some other caustics"; soothing applications; chian turpentine). In only one of the fourteen cases collected was galvanic igni-puncture employed. Death.

Pathologists place carcinomata or so-called cancers under the head of epithelial tumors because in their structure they are made up of cells of the epithelial type.

They are usually divided into two groups:

1. Acinous cancer with scirrhus or chronic cancer and encephaloid or acute cancer as subdivisions.
2. Epithelial cancer, including squamous or columnar epithelioma.

It is unfortunate that reports of cancer of the throat are not more definite as to the specific nature of the growth. For instance the encephaloid variety is more malignant and more speedily fatal than the scirrhus. Colloid degeneration of these growths seem to diminish their malignancy. Every now and then an encapsulated tumor is met with especially in the soft palate (Green) showing no signs of malignancy and yet having the structure of acinous cancer. Then again in the variety known as atrophic scirrhus the disease is not uncommonly from ten to

twenty years and the extension only local and glandular.

Epithelioma pathologically, is much the least malignant of the cancers and consequently more amenable to treatment, such as by the use of the electro-cautery.

Green in his text-book says epithelioma extends locally, breaks down early and often infects the neighboring lymphatics, but rarely reproduces itself in internal organs. This is probably owing to the size and character of its epithelial elements, which renders them much less liable to transmission by the blood and lymph streams than the cells of the other varieties of cancer.

Its malignancy varies curiously with its seat; thus on the skin of the face it has generally a very chronic course and rarely effects even the glands; on the lip early excision gives a fair chance of cure; on the tongue its course is often so rapid, affection of the glands so early and cachexia and death so speedy that it must be ranked as one of the most malignant tumors.

In the case here reported the large ulcer on the posterior wall of the pharynx had some of the characteristics of the so-called rodent ulcer sometimes seen on the nose and cheek and which pathologists place under the head of epithelioma. This case was the type known as "columnar-celled epithelioma," or "adenoid cancer," showing, also, some squamous cells just as transformation of these growths take place inside of the uterus. These terms are applied to forms of epithelial cancer which grow from mucous membranes of the columnar or cylindrical epithelium variety. They have a great tendency to undergo colloid degeneration. For this reason writers in reporting cases of malignant growths in the throat, should certainly try to state exactly the pathologic character of the same in order that any statistical presentation in the future might be more accurate. Furthermore, we would be in a better position to pass judgment on the final result accomplished by the treatment if we knew the character of the malignancy.

It has now been three years since the case here reported was healed, and there has been absolutely no signs of a return. The results obtained in one case especially of a cancerous type certainly does not justify any positive deduction, but the writer believes that the thorough and judicious use of the

electro-cautery offers the best chance for a good result. In cases where the growth is limited to those portions of the pharynx which are easily accessible, and where they are of the flat ulcerative type, as in the case here reported, it certainly seems to me that such a method would be able to eradicate the growth far better than any cutting operation, especially if the glands and lymphatics were not also involved.

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SOME OBSERVATIONS ON LATE SYPHILIS, DIAGNOSIS AND TREATMENT.*

By Dr. Elton S. Osborne, Savannah, Ga.

Syphilis is the great protean malady; eminently protean, as there are few diseases in medicine that it can not simulate and the signs and symptoms are ever changing and taking on new and varied forms and characteristics. Protean aptly describes syphilis as Proteus was the mythological God of prophesy and whenever he was approached or grasped he would change his shape and characteristics in order to conceal his identity: Syphilis is everywhere and in the great majority of cases has to be eliminated before an intelligent diagnosis can be made; although the widespread dissemination of syphilis is generally recognized, as well as its extreme frequency and prevalence we are prone to overlook the hereditary and latent types; we are prone to lay too great a stress on the social status or the morality of the patient, although we may be reasonably sure that an individual has never acquired syphilis we can not be sure of his antecedents and unless all are suspected many a case will escape us.

In all cases of any moment we should try the pupillary reflex, the knee jerk, and do a Rhomberg; here we get one of the shortest and one of the longest reflex arcs in the body. When we consider the intimate connection of the eye not only with the central nervous system, but also with the sympathetic and with its antagonist, the so-called autonomic nervous system, and that the retina is really a portion of the brain, we would naturally expect that any involvement of the nervous system would be manifested in the eye; let us consider a few ocular conditions that would suggest syphilis. There is no general disease that is so frequently the cause of a small contracted pupil as syphilis, miosis occurs in the first stages of tabes, in general paresis and to a high degree in complete optic atrophy: Syphilis plays an important role in causing unequal pupils; it is said that 50 per cent of the paretics and 25 per cent of the tabetics have anisocoria. According to Morax the Argyle-Robinson pu-

pillary reflex may be present as an isolated sign of syphilis for from five to seven years before any other symptom appears; it is present in from 70 to 90 per cent of established tabes and in the large majority of the paretics. Abolition of the oculo-cardiac reflex is among the earliest signs of syphilitic disease of the central nervous system, and an absence of this reflex should suggest the etiology of the condition. In paralytic ptosis and paralytic squint, syphilis stands first as a cause; it matters not if the lesion is central or peripheral or whether it is transient or persistent; if a patient has ever seen double even for a short time it is extremely important for the welfare of the patient that syphilis be eliminated, particularly if the patient is over 50, as in this case the paralysis is probably due to an arterio-sclerosis of syphilitic origin, and there will probably be a hemiplegia later on.

The deep diffuse opacities in the cornea are characteristic of hereditary syphilis, and after an inflammation of this character these opacities prone to be centrally located and the remains of the vessels deep in the cornea can usually be made out throughout the whole life of the individual, and is usually sufficient to establish a diagnosis, especially as there are nearly always other signs as deafness, enlarged glands, tophi, low or sunken bridge of nose, Hutchinson's teeth, fine cicatrices at angle of mouth or on hard or soft palate, or a torpid, benign inflammation of the knee joint. Punctate keratitis, or decemetitis, characterized by fine dots occupying a triangular area in the lower third of the cornea is strongly suggestive of syphilis. Iritis, Choroiditis, and inflammation and atrophy of optic nerve are due to syphilis far more frequently than is generally supposed.

In all cases of deafness syphilis should be eliminated; syphilitic deafness may affect the cochlea branch of the auditory nerve alone; in this case there is simply a deafness that usually comes on gradually, but this onset may be sudden; when the vestibular branch is affected there is tinnitus, giddiness or possibly vomiting, irrespective of food, as this is due to disturbance in the semicircular canals. Nystagmus is usually present in the early stages.

In the past year I have seen 17 cases of ocular palsy; it is true that they were principally among the lower classes, but I have

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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been able to establish the diagnosis of syphilis in 100 per cent. Some months ago a country merchant came to the city to consult a physician. He had been having gastric disturbances for some time; he also complained that his eyesight was failing, and he was referred to Dr. Schwab. He was brought by a mutual friend to my office. On examination the pupils were markedly uneven; the Wassermann test was four plus. The case was unquestionably one of incipient tabes, and all symptoms have improved under treatment.

A school teacher past the meridian of life, gave the history of having been ailing all of her life; her blood pressure would get higher and higher and she would go down with intense headache, spending a large proportion of her time in bed and in the hospitals; her vision was poor and was failing. The eye examination showed a choroiditis, and examination of the spinal fluid showed a four plus Wassermann. Several serum Wassermanns were afterwards done, all showing four plus. She has not been confined to bed since the treatment was instituted about ten months ago, and the eye symptoms have greatly improved.

A young lady about 25 has been totally deaf for the last year. Deafness has been coming on for the last ten years; first one ear became affected, and then gradually the other one; she has had tinnitus for the last five years and giddiness at intervals. Wassermann was four plus; she has been under treatment for two weeks, and already can hear slightly in one ear; she seems greatly encouraged.

Andrew, J. J., in the last two years, has spent about \$50 with the opticians for glasses, but somehow his eyes do not seem to improve. Examination revealed a complete optic atrophy of the left eye, greatly contracted pupils that responded neither to cocaine or homatropine, and other unmistakable signs of syphilis. The worst feature about all of these cases, the coroiditis, the deafness, the optic atrophy, is that they can be cured if intensive treatment is instituted early enough.

With regard to treatment Ormsby in the Journal A. M. A., has outlined a method that is an average of that used in the medical centers in the various parts of the world. Treatment is divided into courses; a course consists of first, Arsphenamine, arseno ben-

zol, diarsenol or other like preparation, five to eight doses, a dose to be given every seven to fourteen days.

Second, Mercury: If an insoluble salt is used an injection is given weekly.

If a soluble salt is used an injection is given every second day.

If by injunction a proportionate amount is used daily.

In the chancre stage one course is usually sufficient.

In active syphilis three courses given with a rest of six to eight weeks between.

In tertiary syphilis several courses are given, together with potassium iodide. In syphilis of the central nervous system after intensive treatment with mercury potassium iodide and arseno-arsphenamine benzol intravenously have failed to relieve, intraspinal treatment should be resorted to according to the technique of Swift-Ellis or Ogilvie.

In Conclusion.

In all obscure cases don't say that a patient is free from syphilis until every means of establishing this diagnosis is exhausted.

Don't give salvarsan without mercury.

Don't give anything but the most intensive treatment for syphilis.

"CIRRHOSIS OF THE LIVER * * OPERATIVE TECHNIQUE." REPORT OF THREE CASES.*

By L. Sage Hardin, M.D., Hurt Building, Atlanta, Ga.

After doing three omentopexy, according to Morison Talmage method, for cirrhosis of the liver, and having used the Cigarette and Lambotte's string method of drainage with fatal results, and Narath's and Mayo's methods of operation, relying entirely upon the attachment of the omentum to the abdominal wall or within pockets, I undertook a new procedure to establish a greater collateral circulation in order to relieve the pressure upon the liver that it might get a better blood supply and be relieved to a certain extent of impure blood. The first of these operations was done October 1, 1914, on a case wherein paracentesis had been done every ten days for six times. The history

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of these and other cases will be related at the end of this article.

A right rectus incision is made and the peritoneum from the upper angle of the abdominal wound onto the diaphragm is incised and reflected on each side. These scrolls of peritoneum are attached to the upper surface of the liver, leaving the raw surface thereof and that of the adjacent muscle to come in contact with the liver. The omentum is made raw by resecting a portion and is stitched between the liver and the abdominal wall.

In closing the abdominal wall, no sutures are put into the peritoneum, but the first closing sutures are placed on the anterior surface of the rectus muscle, and fascia—thus turning into the peritoneal cavity the raw edges of the peritoneum, fascia and muscle so as to get a line of adhesion from the lower angle of the abdominal incision, the diaphragm and the liver.

Just below McBurney's point, a small fistulous opening is produced, and to facilitate continuous drainage a Penrose drain cover with a 25-F catheter within the same is introduced. By pushing the catheter inward every four or five days, a permanent drainage of the peritoneal cavity is thus maintained for ten days or two weeks.

It is to be noted that each of these cases have had an attack of jaundice; that each had been alcoholics; and that they had not been drinking any for a period of one to five years; also that they had an absence of filling the pyloric end of the stomach.

Mr. A. J. F., Greenville, Ga., 42 years old; admitted to St. Joseph's Infirmary October 1, 1914, with the following history:

Healthy until 17, when jaundiced for a week; at 25 he had hurting at the ensiform with accumulation of gas in the stomach with tenderness and pains lasting two hours after meals—no vomiting; 30 to 35 he had varying pains with headaches, aching in shoulders and different portions of the body; in 1916, he had swelling in upper portion of the abdomen and suffered more or less with pains in the right hypochondrium and right shoulder; 1912-1913 was in very good health; in spring of 1914 he first noticed his feet swelling, and in August enlargement of the abdomen. From this time on he has aspirated from 8 to 10 days until entering the hospital. He drunk a great deal of whiskey up to five years ago.

Physical Examination: Shows a man aged for his years; arteries hard, sallow, thin; lower extremities swollen, suffering with dyspnoea, due to badly swollen abdomen. Heart negative; rales base of right lung.

This case was done under ether anaesthesia. On opening the abdomen, the liver was very small, gray in color and so hard that we could not put a needle into it, but was scarified so as to give us peritoneal attachment. He gained rapidly in strength, and from 90-some-odd pounds to 150-some-odd pounds.

Case No. 2—Mr. I. W. C., of Fort Gaines, Ga.—65 years old. One sister and one brother died of tuberculosis; otherwise family history negative; had no sickness until 35 years of age, when he had "billious fever" for three years; was in perfect health until about four weeks ago when he noticed abdomen and ankles swollen and began to have pains in the region of the liver; for the past two weeks he has had clay colored stool; for the past few weeks has had pains in both shoulder blades; drank more or less whiskey up to six or eight months ago.

Physical Examination: Well-nourished patient; slightly jaundiced; abdomen distended and filled with fluid; X-ray examination shows absence of filling of the pyloric end of the stomach.

Operation May 26, 1916, under local anaesthesia with gas and oxygen; liver hard, nodular; round ligament oedematous. Operation as above mentioned was done. He improved rapidly; appetite and digestion became good, and stool yellowish. In June there was an accumulation of fluid and another fistulous opening was made. For a week previous to July 12th he voided less and less, urine becoming uraemic. On July 12th under local anaesthesia an opening was made in the right-lateral portion of the abdomen with the escape of quantity of ascitic fluid. The patient did not overcome his uremic condition and died four days later.

Case 3—Mrs. J. H. M., College Park, Ga.—57 years old. Admitted to Wesley Memorial Hospital March 12, 1917, with the following history: Family history negative; four children died in infancy—no miscarriages; typhoid fever 19 years ago for a period of three months; in good health until seven years ago, when she had diarrhoea and was jaundiced for some time—has not been entirely well since. About three years ago

she noticed an enlargement in the epigastrium. Since December, 1916, abdomen has been swollen; she has been unable to take sufficient nourishment on account of pains in the abdomen and has lost considerable weight.

Physical Examination: Very thin, sallow woman, with pinched expression; dry cough with rales at the base of the right lung; abdomen very much distended with fluid.

The above mentioned operation was done under novocaine anaesthesia. The reflected peritoneum was attached to the upper surface of the liver; and the liver and parietal peritoneum were scarified in the right-lateral region. Perfect drainage was obtained from the fistula. She has improved rapidly in strength; appetite and digestion good.

TREATMENT OF CONSTIPATION IN INFANCY AND CHILDHOOD.

W. L. Funkhouser, M.D., Atlanta, Ga.

The definition of woman was once said to be "A constipated biped." We recognize an element of truth in this, but not a justifiable cause. We dropped intestines, lax abdominal walls of the multipara, and the lack of habit formation, make her inclined to this condition. She usually dates her constipation from "always," which may have been the infant at her breast. The general practitioner and the specialist in each branch of medicine must take cognizance of this condition, the correction of which will improve, if not cure ills, which have or will come through the hands of different observers.

The time to correct constipation is in infancy and childhood. The success in the handling of this common, but troublesome, complaint depends upon our ability to grasp the causative factors. Having eliminated the cause, the proper management will improve, if not cure, this aggravating condition.

For a successful evacuation of the lower bowel there must be a patent canal free from reflex disturbances, a sufficient consistency of bowel content and strength of bowel musculature. A disturbance of any of these factors will produce constipation.

We have as mechanical causes congenital dilations of the colon known as Hirsch-

prugh's Disease, other congenital defects, obstruction such as intersusception, malignant growth and stenosis. Spasmodic contractions may produce an obstruction with resulting constipation due to the irritating effect of fissure, hemorrhoids, ulcers, hard stools and the like.

Weakness of intestinal musculature or abdominal wall either from malnutrition or an atonic condition, may be a cause of persistent constipation. The treatment of constipation due to organic causes or atonic conditions are not to be dealt with in this paper, because they are usually cured by correcting the defect which is producing this symptom. It is my purpose, if possible, to deal with the condition we are so often confronted with due to functional, dietetic or hygienic causes.

The most potent factor, both as to cause and treatment of this disease is food. Insufficient food may be the cause in that the bulk of intestinal content being small, the musculature of the intestine is not sufficiently stimulated to produce the peristaltic wave conducive to a free evacuation. This may be caused by a decrease in the amount of food, producing an atonic condition, from malnutrition. The starvation stool seen in pylorospasm or pyloric stenosis is an example of this condition. The required roughness in the food may not be sufficient to produce the required stimulation. The fat in the food either in an insufficient amount or an excess may be a cause of constipation. We have frequently seen by the addition of fat that there is an apparent stimulus by the increase of the fat to the food. On the other hand we have seen marked constipation especially in artificially fed babies as a result of excessive fat food, the stool being large, white and hard due to an excess of fatty acid and soap. An excess of carbohydrate in the form of starch or sugar is said to be the cause of constipation in some cases, especially with such foods as barley and dextrinized starch.

We are all familiar with the effect of heating milk. Frequently, merely the boiling of milk will change the picture from the normal or loose stool to a constipated one.

Again we see constipation as a result of too little use of fluids, especially water. The administration of drugs is frequently followed by a persistent constipation. Lack of

exercise and sedentary habits both play an important role in infancy and childhood as in adult life. Bad habits and poor training should be considered as causative factors, for we know that great difficulty is experienced in trying to overcome bad habits formed in the early months of infancy and childhood.

Constipation is not a distinct entity unless there is some organic obstruction or weak musculature, but is usually the result of faulty hygiene and dietetic management. It takes time to inquire into the details of a child's daily life, but it is only by this careful study of its habits and daily regime are we able to proceed with any degree of satisfaction or plan a campaign for the relief of this condition. Habit constipation: Free use of enemas, suppositories and cathartics have caused an acquired condition which will take time, patience and co-operation to overcome. The earlier these bad habits are formed the more difficult is our task.

Constipation per se in the breast fed with the baby happy and gaining in weight should cause us but little concern, for as soon as the infant is old enough to be given a laxative diet this symptom will soon be relieved. However, it is our duty during this time to form habits which will simplify our procedure later. The use of a soap or glycerine suppository or a small amount of water injected into the rectum each morning just before the bath will frequently inaugurate a habit which will soon be followed by a normal, natural stool as soon as the baby is able to sit up. Drugs, such as liquid petroleum, milk of magnesia, syrup of rhubarb and the like, may be used occasionally, but not as a routine. Liquid petroleum, if used, must be used over a long period of time to obtain any results. Cases in which the stools are dry and hard, the lubricating qualities of the oil may be used with benefit.

Babies upon modified cow's milk usually have hard, constipated stools due to an excess of soap. A careful study of the stool to ascertain whether there is an excessive fat will determine whether the fat content of the food should be increased or decreased. This correction may alleviate the symptom. The change of sugar administered in the food may frequently give beneficial results. For instance, a food containing milk sugar or cane sugar may be relieved by the use

of malt sugar or by the use of the so-called malt extract in the form of malt soup. A child that is past three months of age, the addition of oatmeal water as a diluent is frequently quite beneficial. Free use of water is always helpful. As soon as the infant is old enough to handle orange juice or prune juice, this may be added daily to the diet. Ladd, of Boston, has instituted homologized milk to a decided advantage. His contention is that it is the excess of cow's fat which produces constipation; so he devised a scheme of emulsifying in an homogenizer pure olive oil in fat free cow's milk. He not only improved the constipation, but aided malnutrition resulting from the indigestion of the cow's fat.

After the weaning period, constipation is produced by many mothers not feeding the child anything but a constipating diet for fear of producing a diarrhea. As a result the child is not on a properly balanced diet, and he becomes constipated and anemic. As the child advances in age, this same type of mothering knowing that milk and eggs are considered a most nutritious diet, forces the child to take almost exclusively this food. This also is not a balanced diet; therefore, the child develops a constipation, anemia, intestinal putrefaction and a chain of symptoms of which we are all familiar. If we will but decrease the milk and eggs, increasing the cereals, giving coarse vegetables high in cellulose, such as lettuce and spinach and which contain a large amount of moisture; in other words, maintain a properly balanced diet, we will change the picture from the one above described, to a happier, more content and robust child.

It is quite difficult to outline a diet for general use, because to obtain desired results it is necessary to study each individual case and adjust the food not only to caloric requirement, but for the dietetic function of each individual depending on age, physical development, etc. I wish to emphasize that we must as far as possible stay away from all drugs. It is so easy to write a prescription which will give temporary relief, satisfy the parent, but intensify symptoms a little later. Pharmaceutical houses are opening into our hands literature and samples for the relief and cure of constipation, but our results will not be lasting unless we carefully inquire into the habits, diet and daily routine, correcting any errors and

maintaining a properly balanced diet. Even this, without the co-operation of the mother will not be permanent, for she must persistently see that the diet and management are carefully followed. The diet to select from is as follows:

Meats—Animal broths, purees of peas, roast beef or rare steak, hashed chicken, lamb chops, soft boiled eggs.

Vegetables—Peas, beans, spinach, asparagus, strained tomatoes, cauliflower (mashed).

Cereals—Cracked wheat, oatmeal, grits, cornmeal.

Breads—Bran biscuit, oatmeal crackers, Agar wafers, Graham wafers, Zwieback, whole wheat bread and biscuit.

Dessert—Stewed or baked apples, stewed prunes, junket, vanilla ice cream.

Fruits—Dates, figs, oranges, scraped apples.

Fruit Paste (made as follows)—One pound of figs, one pound of dates, one pound of prunes, one ounce of senna leaves run through the food chopper twice, roll in cakes or balls and dust in sugar. Keep in cool place. One or two used as a dessert.

Ample outdoor exercise regulated to the requirement of each individual child, massage and free use of water is a part of the hygienic management just as important as diet. For a stool during our treatment milk of magnesia, rhubarb or any of the other laxatives can be used temporarily, or suppositories and enemas cautiously administered. Olive oil injections at night to be retained until morning may be beneficial in a few cases, but usually is not necessary.

A brief report of a few cases may, while uninteresting, explain points not made clear.

G. K.—Age 3 1-2 months, breast fed, always constipated, physically perfect, weekly gain in weight normal, mother's milk perfect; stool soft, spongy. The use of 5 per cent oatmeal water before nursings correct d this condition.

B. K.—Age 2 months, very fat baby, weekly gain in weight one-half pound; mother's milk showed 5 1-2 per cent fat. The use of boiled water before each feeding diluting the fat content, restriction of fat in the mother's diet and increased exercise gave the desired results.

K. C.—Age 5 weeks, normal baby with the exception of colic; mother's milk normal in

fat, but high in proteid; stool small, dry, was relieved by two teaspoonfuls of liquid petroleum each night. This baby was not old enough to be given supplemental feeding or the addition of cereal water. The above cases apply to breast fed babies. Babies on modified cow's milk offer more opportunity for adjustment of the diet. Each change should be made after a very careful examination of the child and stool and a final adjustment of the food to the child's digestive powers.

A. S.—Age 3 months; nursed one month on Nestles Food up to the time I saw her. First milk tried was modified cow's milk, with no results. A gain in weight was consistent, but constipation continued. The stool became large, white, soapy stools and I then tried as a diluent oatmeal water with no result. Dextro-Maltose, which was the sugar I was using, was changed to Mellin's Food; constipation continued. Examination of the stool did not show any excess fat or soap, so I determined to use the same modification, but with the addition of Malt Soup feeding, this relieved the situation.

This case exemplified three measures, any of which in some cases may relieve the constipation.

The addition of Milk of Magnesia will relieve temporarily the constipation, while we are adjusting a food to the requirement of the baby, but should not be continued over any long period.

After the child has reached a sufficient age, more liberty being given him in his food, the element of training and habit now added to his daily regime, the correction of constipation should be more easy.

The diet list included may be selected from, remembering at all times to select the diet with reference to the age, digestive function and tolerance of each individual child. While selecting a laxative food, it must be borne in mind that a food balance must be maintained so that there will be no disturbance in the normal metabolism. Any disturbance of this metabolism, especially under two years of age, will frequently produce a "symptom complex" with the resultant acid intoxication of which so much is being said at present.

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- 1 Treatment of Lobar Pneumonia—J. W. Palmer, M.D., Ailey.
- 2 Some Interesting Nasal Cases Probably Due to Syphilis—Dunbar Roy, M.D., Atlanta.
- 3 Difficult Feeding Cases in the First Year of Life—W. A. Mulherin, M.D., Augusta.
- 4 Caesarian Section—A Midgit—R. C. Woodard, M.D., Adel.
- 5 Diagnosis and Treatment of Gastric Ulcer—J. T. Rogers, M.D., Savannah.
- 6 Writers' Cramp — Theodore Toepel, M.D., Atlanta.
- 7 Children's Work in War Time—Frances S. Bradley, M.D., Tifton.
- 8 Earache and Deafness—A. B. Mason, M.D., Waycross.
- 9 Syphilis Versus Cancer of the Stomach—Geo. M. Niles, M.D., Atlanta.
- 10 Direct Alcoholization of the Sensory Root of the Fifth Nerve in the Treatment of "Tic Douloureux"—H. H. Maryin, M.D., Savannah.
- 11 A New Incision for the Surgery of the Gall Bladder and Duct—Charles Usher, M.D., Savannah.
- 12 Prostatectomy—W. L. Champion, M.D., Atlanta.
- 13 Appendicitis—L. C. Fischer, M.D., Atlanta.
- 14 Laparotomy of the Knee Joint—Walter Norton, M.D., Savannah.
- 15 Demonstration of the Surgical Anatomy of the Accessory Sinuses of the Nose—J. T. Maxwell, M.D., Savannah.
- 16 Traumatic Wounds of the Eye, With Report of a Case—M. M. Stapler, M.D., Macon.
- 17 The Syphilis Clinic of Emory University, Atlanta, Georgia—W. B. Emery, M.D., Atlanta.
- 18 Ureteral Stones. Their Removal by Aid of the Operating Cystoscope; Report of Case—E. P. Merritt, M.D., Atlanta.
- 19 Roentgen Diagnosis in Cases of Empyema Simulating Other Diseases—W. A. Cole, M.D., Savannah.
- 20 Collo Cell, a New Surgical Dressing and Drainage. A Radical Departure in Surgical Dressings. A Demonstration—St. Joseph B. Graham, M.D., Atlanta.
- 21 Acidosis Associated With Infections of the Air Passages. A Clinical Report of Forty Cases—A. J. Waring, M.D., Savannah.
- 22 Arsenic in the Treatment of Skin Diseases—Cosby Swanson, M.D., Atlanta.
- 23 Internal Glandular Secretions in Relation to the Eye—Elton S. Osborne, M.D., Savannah.
- 24 Ten Years' Experience in the Treatment of Pneumonia—S. T. R. Revell, M.D., Louisville.
- 25 Recent Clinical Laboratory Developments—E. C. Thrash, M.D., Atlanta.
- 26 Plastic and Cosmetic Surgery—E. D. Highsmith, M.D., Atlanta.
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- 28 The Value of a Commission for the Study and Control of Cancer—J. L. Campbell, M.D., Atlanta.
- 29 Papillomata of Gall Bladder and a Case of Anastomosis of Biliary Sinus to Intestine—T. P. Waring, M.D., Savannah.
- 30 Mental Disturbances Caused by Syphilis—Lewis M. Gaines, M.D., Atlanta.
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- 32 A New Method of Applying Heat in the Treatment of Intustitial Keratitis—J. Lawton Hiers, M.D., Savannah.
- 33 Goitre. End Results in 70 Operated Cases—W. S. Goldsmith, M.D., Atlanta.
- 34 A Plea for the Conservation of Human Milk—W. L. Funkhouser, M.D., Atlanta.
- 35 Post-Operative Treatment of Gynecological Cases—Marion T. Benson, M.D., Atlanta.

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MEDICAL PREPAREDNESS.

Every Doctor in the Age in the Corps.

The subject of a recent announcement by the Council of National Defense is to the effect that the end desired in the way of Medical Preparedness at the present time is "Every Doctor in the Age in the Corps."

The term "Doctor" in this case refers to graduated, licensed practitioners who are capable of being of service.

The phrase "In the Age" refers to those between 22 and 55 years of age.

The term "Corps" refers to the **Medical Officers' Reserve Corps**.

The General Medical Board has recommended the creation of what is at present designated "The Medical Service Corps." It is to be composed of doctors who are eligible for the Medical Officers Reserve Corps ex-

cept for: First, Over age. Second, Disqualifying physical defects. Third, Essential community or institutional needs. If these recommendations are honored, there will be three distinct groups of doctors: First, those in the Medical Officers' Reserve Corps. Second, those in the Medical Service Corps. Third, those not identified for service in any capacity.

The duties that members of the Medical Service Corps will be called upon to perform have not as yet been defined, nor have the details as to the plan of organization been announced.

If every doctor who is qualified in every way for a commission in the Medical Officers Reserve Corps applies for, and accepts such commission, he will have done that which he is now asked and urged to do. Even though he joins the Corps he will not be called into active duty unless he is needed.

Future developments will, of course, determine as to whether or not any given person is to be called into active service.

A review will clearly show that a comparatively small number of counties in Georgia have furnished their share of doctors, and that some of these few counties have done more than their share in supplying the needs of the present army in a medical way.

If every doctor in the age joins the Corps the needs of such communities can be properly taken care of. That is, the men most needed at home can be left at home. The army needs and the various community needs can be adjusted intelligently. There is no questioning the fact that this is the ideal condition of medical preparedness. Can the ideal condition be created voluntarily? What do you say about the program? Will you do your part?

The Government is depending upon the doctors of America to volunteer their professional services—that is to volunteer to do service as medical officers. Will the nation, of necessity, change said policy? Is the confidence thus reposed in the medical profession misplaced?

Many states have already furnished quite their share of the number of doctors required to take care of the medical needs of the first army. Regrettable, though it is, Georgia is not one of these. Georgia is rapidly coming to the front, however, and will doubtless soon be listed among the states which have done their share.

The Surgeon General does the assigning to duty after one joins the Corps. Every doctor whom you see in uniform has signed an application and an oath. You are asked to sign an application and present yourself to any examiner whom you prefer for examination. You will determine as to whether or not you will sign the oath after your commission comes.

Then to the direct question. What is your attitude in regard to the matter? You have doubtless been thinking it over for the eight months which have passed since war was declared. Are you in favor of the program: "Every Doctor in the Age in the Corps?"

The fathers and mothers of drafted men are anxious about your answer. Your fellows in the Corps; your fellows at home—in fact, the nation, is anxious to know your answer.

No man has been appointed anywhere to officially tell you where your duty lies. The nation is making the call. It applies to every man. It is your **business**, and your's alone to determine the question as to where your duty lies.

AN UNFAIR ADVANTAGE.

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INDIRECT, DIRECT AND SUSPENSION LARYNGOSCOPY.*

By Cecil Stockard, M.D., Atlanta, Ga.

In the not very distant past the term "laryngoscopy" meant the examination of the larynx by means of the laryngeal mirror, or what is now known as "indirect laryngoscopy"; but latterly, through the efforts of Kirstein, Killian and others, new methods and new instruments have been introduced so that the term "laryngoscopy" now includes the indirect, direct, retrograde and suspension methods. Each of these has an important place to fill, and though there is some overlapping, none can be dispensed with entirely by those who wish to do the best possible work in the larynx.

The object of this paper is to describe these methods briefly and to show the field of usefulness of each.

Indirect Laryngoscopy.

The use of the mirror to examine the larynx by direct sunlight was introduced by Manuel Garcia in 1855. Turck improved the technic by using a reflector or head-mirror, and in 1857 Czermak suggested the use of artificial light, thus bringing this method practically to the state of perfection it enjoys today. Of course, the candle or lamp was superseded by the gas light, and this in turn by electricity, and now the head-mirror may be dispensed with by having a small electric light attached to the handle of the mirror, but this last has not come into general use, and the method employed by most men at the present time is substantially the same as that of Czermak. Practically, then, it may be said that the entire modern science of laryngology owes its existence to the original workers of sixty years ago. And great indeed is their contribution to medical progress.

The technic of indirect laryngoscopy is briefly as follows: The tongue being pulled forward, the laryngeal mirror having been previously warmed to prevent condensation of moisture on its surface, is introduced into

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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the pharynx in such a position that rays of light from the head-mirror are reected downward into the larynx and at the same time the image of the larynx is reflected by the mirror so as to be visible to the operator. By this method pathological lesions of the epiglottis, ary-epiglottic folds, arytenoids, ventricular bands, and the vocal cords may be determined with more or less facility. In particular the posterior surface of the epiglottis can only be examined by this method, as in the direct methods the tip of the spatula hides the greater portion of the epiglottis from view. The presence of hyperaemia, ischaemia or other discoloration is best determined by this method, as in the direct methods one is apt to be misled by the pallor induced by the anaesthetic solution or the engorgement caused by manipulation and pressure. The motility of the cords must be determined by the indirect method, as in the direct methods the larynx is more or less stretched antero-posteriorly, and consequently natural phonation is difficult, if not impossible.

Formerly surgical operations in the larynx were frequently done by the indirect method, but as the advantages of the newer methods become more widely recognized, the old is rapidly becoming obsolete. The latest use of the indirect method is as a preliminary to direct laryngoscopy. This should be done in every case if possible. The epiglottis, motility of the cords, and the color of the tissues should be particularly noted.

Direct Laryngoscopy.

Direct laryngoscopy by means of the straight spatula was introduced by Kirstein in 1894, and later Killian simplified the method by constructing spatulae with turned up sides. The only instrument required for direct laryngoscopy is a straight spatula long enough to reach over the epiglottis and turned up at the sides to keep the tongue out of the way. This spatula may be illuminated by three different methods: first, a head-light or head-mirror may be used; second, the handle of the instrument may be so constructed as to bear a light which is reflected along the spatula by an adjustable mirror, such as the Brunings and Kahler electroscope, or, third, a small light may be carried near the tip of the spatula as in the Jackson and similar instruments.

Technic.

Direct laryngoscopy may be performed under local anaesthesia, in the case of adults; with no anaesthesia, in the case of infants or small children who can be held still; or under general anaesthesia in any case. The patient may either be seated or lying upon his back; and in certain cases Brunings has advocated placing the patient on his side or even face downward on the table, but this seems to me of doubtful value. The technic is the same in any position; the spatula is introduced into the mouth and used as a tongue depressor, pressing especially on the posterior part of the tongue until the tip of the epiglottis comes into view. The tip of the spatula is then raised, that is, moved toward the soft palate, and the instrument is inserted far enough to pass the tip of the epiglottis for about one-half inch, and then the entire instrument is so moved that the tip of the spatula is brought down against the posterior or laryngeal surface of the epiglottis, and then pulled toward the front of the neck. This motion pulls the tongue and epiglottis forward out of the line of vision, so that on looking along the spatula, a more or less satisfactory view of the interior of the larynx is obtained. The arytenoids and posterior ends of the cords first come into view and as the forward traction is increased more and more of the cords are brought into view until in many cases the anterior commissure is seen.

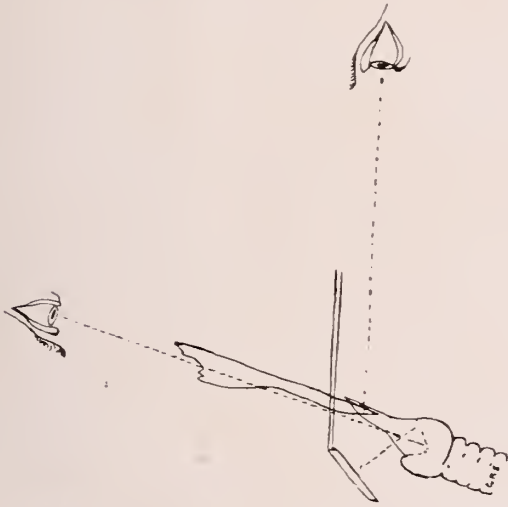
Counterpressure.

When a good view is not easily obtained the field of vision may often be considerably increased by pressing the larynx backward either with the hand or by means of the Brunings counterpressure.

Field of Usefulness.

In discussing the field of usefulness of direct laryngoscopy I wish to call attention to some of the defects of the indirect method, and to point out the reasons for my position that every laryngologist should practice direct laryngoscopy. The first objection to indirect laryngoscopy which naturally comes to mind is the fact that the image is inverted by the mirror, and it is only after considerable experience that one is able to obtain a clear conception of the location of nodules, ulcers, etc., in a brief examination, and this difficulty is greatly augmented when surgical intervention is undertaken, as it is

much more difficult to work around a corner with an angular instrument, than to approach the field of operation directly. The indirect method does not show the depth of the larynx as does the direct. This is partly because the anterior surfaces of the arytenoids and the inter-arytenoid membranes, as well as the posterior portion of the cords are hidden from view as shown by this diagram, which illustrates the relative position of the mirror and larynx.



Furthermore, it is difficult to over-estimate the pathological importance of this very portion which is hidden, namely, the posterior ends of the cords and the anterior surface of the posterior wall of the larynx, as this is the usual site of tubercular lesions as well as malignancy.

Laryngoscopy in infants and small children is of necessity direct, as it is impossible to use the mirror in such cases. And not the least important function of direct laryngoscopy is as a preliminary step in Bronchoscopy and Oesophagoscopy.

Retrograde Laryngoscopy.

Retrograde laryngoscopy is the examination of the under part of the larynx by means of a tube introduced through a tracheotomy wound. Its field is rather limited, but in many cases of laryngeal stenosis, or impacted foreign body in this region it is indispensable.

Suspension Laryngoscopy.

Early in 1910 Killian, wishing to have some laryngeal drawings made from a cadaver, and not having time to hold the instrument by hand, improvised a fixation apparatus with several iron rods which were at-

tached to the dissecting table, and attaching the handle to the rods. Thus the head of the cadaver hung suspended from the spatula, and the wonderful view of the larynx, hypo-pharynx and surrounding structures astounded him, and as he said, set him to thinking. As a result of this thought and much work and experiment, he was able to report suspension laryngoscopy at Berlin in the fall of 1911.

On its introduction into this country suspension laryngoscopy was taken up with enthusiasm by several men, and more than one of these has made modifications and improvements in instruments and technic. Foremost among these improvements stand those suggested by Robert Clyde Lynch, of New Orleans, and his apparatus is used by most American workers in this field.

Technic.

This method consists essentially of a spatula which is introduced as in direct laryngoscopy with the patient lying on his back, and the handle is hung on an adjustable crane. General anaesthesia is usually needed for this procedure—though many cases bear suspension under profound local anaesthesia. I know of only one thing in surgery which compares with the view obtained by suspension laryngoscopy, and that the vagina as exposed by a heavy weighted speculum.

The principal field for suspension is, of course, endolaryngeal surgery of all kinds, though it is also very useful for purposes of diagnosis in obstinate cases.

Every laryngologist has for years practiced indirect laryngoscopy, and I urge every laryngologist from this time forth to take up direct laryngoscopy, as in it he will find a useful diagnostic measure which will greatly supplement what he has learned from the mirror, and at the same time render slight endolaryngeal operations much easier.

I do not counsel every laryngologist to practice suspension laryngoscopy, for the same reason, mainly, that I do not advise all to practice tracheo-bronchoscopy and oesophagoscopy, namely, that these procedures are ultra-specialistic, and there is not enough of such work to make it worth while for more than one or two men in a community to become proficient in such difficult operations.

929 Candler Building.

CHRONIC APPENDICITIS IN YOUNG CHILDREN.*

By Dr. Baxter Moore, Atlanta, Ga.

Chronic appendicitis in young children, I am sure, is a condition which has not been recognized as often in the past as it should.

Acute appendicitis is very familiar to all. At the present time, almost any layman can diagnose acute appendicitis, or at least he knows enough about the seriousness of the disease to come to the doctor when he has a violent pain in the abdomen, especially if the pain is more to the right side of his abdomen than the left, and the education of the layman by the doctor as to the symptoms of this disease has been one of the greatest steps taken to combat the ravages of appendicitis, because at the present time we get most of such cases before much involvement of the surrounding tissues has had time to take place.

Acute appendicitis is and has been recognized for some years in young children; in fact, it is recognized as the most common and important surgical disease of the abdomen in children.

The fatality following operations upon children for appendicitis has been greatly exaggerated in the past, and is still by some. Dr. William B. Coley, of New York, shows a mortality of only 12 per cent in 86 cases, and these cases were all from the poorer classes, in which case possibly no doctor had ever been seen until they arrived at the hospital, but the parents had treated for some digestive trouble, or had not considered the child's complaint as at all serious until the child was in real agony or perfectly limp from an appendix which had become an abscess, gangrenous, or had ruptured, thus giving the mortality as above recorded.

A small child will bear a far greater amount of pain with much less complaint than will the adult. I know that this statement will be challenged by some, but I believe that the vast majority of the profession will agree with me in this opinion. I have known children between the age of 2 and 5 years to have an acute condition of the middle ear, and never once complain of the

ear at all. I have in mind one of 3 years of age, who never complained, and the condition would have been overlooked if it had not been for the fact that I discovered the discharge.

I could relate many cases to bear out this statement as to children not complaining of pain.

Chronic appendicitis, I believe, occurs very often in children, and the cases are not reported, for the simple reason that it is the common belief that it does not occur in young children, and often even after the doctor has failed to satisfy himself as to what the condition is, he does not even examine the child as he should to eliminate appendicitis.

Chronic (relapsing, or recurrent) appendicitis was not for a long time recognized by the medical profession as it should have been, but I am thankful to say that the internist does not spend as much time trying to effect a cure for appendicitis with drugs as he once did; I am also sure that the stomach specialist of today will admit that many of the digestive disorders which he in the past tried to correct by the use of the stomach pump and by drugs, he has long since found to be due to a chronic appendix.

It is my sincere hope that men of our profession who are devoting their time and attention to the diseases of children will in the future be more attentive as to the possibilities of the many digestive disorders which may be produced by the presence of a chronic appendix in a child, even of a few months or weeks after its birth.

There is nothing in medicine or surgery more important in aiding one to arrive at the proper diagnosis than a good clear case history; this, of course, is very often very difficult to get, especially in the case of a child, but by patient and intelligent quizzing of the parents, a good history of most cases may be obtained. I am sorry to say that in many cases this is sadly neglected.

Too often when the child does complain of abdominal pains, it is given a dose of castor oil and dismissed. I admit that castor oil is a most excellent drug, especially for children, and it does clear up many abdominal pains, and that is possibly the last you hear of the pain, but at the same time because of the fact that this form of treatment does suffice, at least temporarily, it is no excuse for the doctor to give the child a pass-

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ing glance and say to the parents, "Oh, it's nothing."

Every child who has pain within his abdomen of sufficient severity to have the doctor called should certainly have a most comprehensive examination of the abdomen made by the attending doctor at that time. It is hard enough to locate the real cause of pain in the adult abdomen, and therefore much harder often to locate it in the child, and I am sure, for that reason, the child's abdomen should be examined even more carefully than that of the adult, and not given a passing glance and a dose of castor oil.

I will not go into the technic of an abdominal examination, but take it as a matter of course that every man in the profession has familiarized, is familiarizing or is going to familiarize himself with the proper technic of an abdominal examination, which he can get from any one of many excellent books now upon the market, and more important than the technic, learn how to interpret his findings upon such an examination.

The X-ray is of invaluable assistance in many of these cases, and I would advise that a picture be made in every case possible. It is better, if possible, to have pictures of the entire alimentary tract taken, so as to get all information possible as to the condition of your patient. Where that is not possible, I would advise a picture of the cecum and surrounding tissues. Often an appendix may be demonstrated by the fluoroscope, where it is impossible to show the appendix with a picture; i. e., at times the cecum can be held to one side, and a post-coecal appendix demonstrated, which would have otherwise been hidden by the cecum.

There is no organ of the body, and no faculty of the brain of the growing child, which is immuned from the ill effects of a chronic appendix. It has been demonstrated almost beyond numeration that poisons in the form of toxins are absorbed from a chronic appendix; the same is true of a very small abscess at the root of a tooth or a tonsil. It is sometimes marvelous to hear related the ill effects following absorption from a small abscess at the root of a tooth or that from a tonsil, and the men interested in these lines of work have succeeded in impressing the public as to these far-reaching and harmful effects of absorption from the above-

mentioned conditions. I do not challenge these statements as to the importance of having these conditions corrected; what I wish to do is this:

If, as it has been shown, that so many pathological conditions can arise from absorption from an abscessed tooth and tonsil, which are, at least in part in most cases, drained out through the mouth, in that the patient gets rid of some of the drainage by expectorating, just think of the toxins absorbed from an old chronic appendix, many of which are as long as eight to ten inches, with a caliber of one-half inch, and not a few reaching proportions far surpassing these dimensions.

There is no part of the body or mind immune from the ill effects caused by the absorption of the toxins formed in this way, and to my mind there is no greater cause for faculty development of the mind and body than a person being so unfortunate as to be the possessor of a chronic appendix, which is feeding him poison continually, and o fall time in the life of a human being to recognize this great handicap to growth and development of mind and body, extreme youth is the time, so as to give the individual his fair chance to compete with his fellow man in whatever capacity he may choose.

Following are two case reports, which I feel will be of interest:

CASE A. Boy 7 years old. When born was a perfect specimen; so far as could be found by examination weighed about 7 1-2 pounds. At two weeks developed a most severe attack of ilio-colitis; was desperately ill for six weeks.

This child had every attention which money could give; there was a graduate nurse on duty night and day, and every bit of nourishment was as carefully prepared as possible; still these attacks occurred at intervals of about every six months.

When the child was about 3 years of age he was put under the care of one of the leading men in this country, a man noted for his knowledge of the diseases of children; while under this eminent specialist the child did not have an attack of ilio-colitis, but developed rickets from being kept up on too limited diet. The child was under the observation of this specialist for three months, and dismissed with no explanation as to the cause of the attacks involving the intestinal tract.

Later the child was kept in one of the great Eastern hospitals for three months, and no cause for this condition demonstrated.

At about the age of 7 years he was a poorly nourished boy, still showing signs of rickets and giving a history as follows:

Slightly indisposed, sense of nausea, temperature 102, and as expressed by the patient, his stomach felt hot.

Upon examination I found but slight tenderness, and no rigidity of the abdomen, not even of the right rectus muscle; the patient was very thin, and I could make out a slight mass; deep pressure gave some pain.

Further questioning of the mother gave out this fact: When the child would have these attacks, she would give him a large dose of castor oil; he would have one to three normal movements and then one which looked to her like pus, then his temperature would subside and the attack would be over.

I advised an X-ray picture as the blood picture was practically normal; with the fluoroscope I could, by holding the cecum to one side with my hand, demonstrate the appendix, but could not get a picture as the cecum would hide the appendix. When allowed to remain in its normal position, the appendix was post-coecal, but there were no adhesions.

I removed the appendix the following morning and found it to be about six inches long; about three-quarters of an inch from proximal end, there was quite an enlargement, which was undoubtedly the seat of the trouble. The lining to this dilated part of the appendix was an old pyogenic sac which became blocked at intervals and then there was the formation of an abscess which would rupture into the colon when the pressure became sufficiently great, the point of least resistance being towards the colon.

Since the removal of the appendix in this case there has been the greatest change in the child; as it were, he has been made over. For the past year he eats what he pleases to and never has a pain nor an ache and is gaining in strength every day.

CASE B. Boy 7 years of age. Parents very large and strong; brother only two years older is almost twice as large.

Up to the age of 4 years patient was as good specimen as the older brother, previous history practically negative; at the age of four years he commenced to lose his

appetite; did not have the same amount of energy which he had displayed previous to that time, complained of slight feeling of nausea and began to lose weight and flesh, and the body poise became that of a poorly nourished child. He had been treated by a number of physicians for indigestion, but has not responded to treatment.

I made a thorough examination of the child's heart and lungs and found them to be normal.

Following is a report on the examination of blood, urine and feces:

Laboratory of Dr. Allen H. Bunce, Suite 823-826 Healey Building, Atlanta, Ga. Laboratory number 14493.

January 14, 1917.

Dr. Baxter Moore, Atlanta, Ga.

Dear Dr. Moore. The following are my findings in the examination of your patient, Master John Willis:

I. Blood.

Red blood cells, 4,256,000.

Hemoglobin, 75 per cent.

Color index, .89.

White cells, 10,500.

Differential Leukocyte Count.

Polynuclears, 70 per cent.

Small lymphocytes, 20 per cent.

Large lymphocytes, 7 per cent.

Transitionals, 2 per cent.

Eosinophiles, 1 per cent.

No malarial parasites.

II. Urine.

Chemical Examination.

Color, slightly amber.

Transparency, cloudy.

Reaction, acid.

Sp. gr., 1030.

Albumen, none.

Sugar, none.

Indican, trace.

Acetone, present, small amount.

Diacetic acid, none.

Microscopical Examination.

Much amorphous urates. A few uric acid crystals. Many calcium oxalate crystals. No pus. No casts.

III. Feces.

A large amount of mucus. Some red blood cells. A few calcium oxalate crystals. No eggs of intestinal parasites.

Respectfully submitted,

ALLEN H. BUNCE.

Physical examination of the abdomen revealed slight tenderness over the appendix and some muscular spasm of the right rectus muscle.

I advised X-ray pictures of the digestive tract.

There was no pathological condition found about the stomach or any other part of the tract until a colon injection was made, and then the appendix was demonstrated as shown in this picture.

I could give the case history of several other cases of this kind which have come under my observation within the past few years, but I am sure that these two will recall to many of you cases which you have treated over long periods of time without getting the results which you looked for, and I am sure that there are many people in the world today who have never had good health and, therefore, never had a fair chance to compete with his more fortunate brother because a chronic condition of this kind has held them back physically and mentally for the better part of their lives.

SYPHILIS OF THE STOMACH WITH REPORT OF CASES.*

By Dr. L. C. Fischer, Atlanta, Ga.

At a meeting of the Georgia Medical Association in Macon in 1915, I read a paper and reported three cases of syphilis of the stomach and internal viscera; two of the stomach, and one of the cecum and ascending colon. Two and a half years have elapsed, and all three of the patients remain well. Case three has had one additional dose of salvarsan. They are at their accustomed vocations and suffering no discomforts. All digestive disorders have disappeared; they have regained their weight and strength. Should there have been any doubt as to the diagnosis in these cases, that doubt would have been dispelled by time. They were all three operated upon for what was supposed to be cancer, and upon opening the abdomen the conditions were such that an operation could not be done. They were accordingly examined for syphilis, and in each case proved positive from 2 to 4 plus.

The fact that they remain well precludes the possibility of them having any form of malignancy or any condition other than syphilis.

Up to 1915 there was little written on syphilis of the stomach and intestines, especially in text-books, most authors only mentioning such a condition. At that time I was only able to find about sixty cases of syphilis of the stomach reported. Since, there has little appeared in text-books, but several articles in the journals and some in the special papers from the Mayo clinics. In the last few years great strides have been made in the diagnosis of syphilis of the nervous system and internal viscera. So much so that when one is in doubt of a positive diagnosis of many of the surgical and medical conditions, a Wassermann test should be a part of the general examination. Indeed, I have found syphilis present in so many conditions where I did not expect it, that if there is the slightest doubt in my mind as to the actual conditions, a Wassermann test is made a part of the laboratory work. I think there can be no doubt that the passage in the book of Holy Writ, "That the sins of the fathers shall be visited down to the third and fourth generations," refers to syphilis and allied diseases.

On a visit to Europe in 1914 I was impressed with the statement made to me in Vienna, "That the people of Austria and Italy especially, were divided into three classes, those who had syphilis, those who have it now, and those who are to have it."

Certain it is that in the last few years we have come to recognize this condition in so many patients where previously we would not have dared associate syphilis with the pathology. We have come to realize that this disease is so much oftener hereditary than was previously supposed. All cases reported by me denied the primary lesions, either on the genitals or other parts of the body. When we realize that syphilis is no respecter of persons, I feel that we will save our patients many serious risks of their lives and health and ourselves much embarrassment. Some of the most refined and cultivated patients I have had, proved positive to the Wassermann test, and I have explained to the patient that there was a syphilitic infection, most likely inherited, and also the possibility of this infection being received other than through the genitals,

*Read at meeting of Medical Association of Georgia, Augusta, Ga., 1917.

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where a few years ago I would have been embarrassed to have discussed this with this class of patients.

Since 1915 I have had two additional cases of syphilis of the stomach, both of which are interesting. Case 1: Mrs. C. L. C., referred to me by Dr. George M. Niles, of Atlanta, and Dr. J. L. Dixon, of Woodbury, Ga. She was a widow and had been for many years, 42 years old and the mother of one child. No history of miscarriages. Had the usual diseases of childhood. She menstruated early, which was irregular, and suffered always at that time. Family history negative. Had been in delicate health for years, but no serious illness other than her stomach. Operated upon eight years ago for hemorrhoids, which she claims were not relieved. Has suffered with stomach trouble sixteen years, with occasional nausea, vomiting and bilious attacks. Fifteen years ago she was reported to have had gastric ulcer, at which time she was said to have vomited blood on several occasions. Has had attacks of diarrhea in the spring up to the last two years, and suffered with slight attacks of jaundice. She has been treated by various physicians, her stomach being washed out repeatedly, but has continually grown worse. At present she complains of an uneasy feeling in the stomach immediately after swallowing, which produces a choking sensation. Is hungry all of the time, but can not retain food. Vomits all meals in an hour or so after taking. During the time the stomach is full there is much pain. There is occasional pain in the lower part of her abdomen, which she attributes to ovarian trouble. Suffers with headaches. There is a constant eructation of food after she eats until the stomach is empty. On several occasions had a bloody discharge from the bowels, especially when constipated. Appetite is good, but has lost twelve pounds in the last two months.

Upon physical examination there is a mass perceptible in the epigastrium, which is freely movable. Heart, lungs and kidneys negative. Both ovaries cystic; uterus retroverted and retroflexed, but apparently giving no symptoms except slight pain. The female conditions, which would ordinarily receive attention were of so much less importance than her stomach, that no attempt was made to relieve these. The usual laboratory examination of urine was negative. Red cell

count, 3,800,000; white, 8,400; polys, 67 per cent; hemoglobin, 75 per cent. The stomach contents were carefully examined by Dr. Niles. X-ray plates were made. These convinced him that she had cancer of the stomach. (Plate 1 will show a complete obstruction of the pyloric end of the stomach, that the cap does not fill, and the impossibility of her retaining food.) A Wassermann test was made and a negative report given on June 14, 1917. On July 24, 1917, she was



Plate 1, print from a plate of case 1 of the last two reported showing complete obstruction of the pyloric end of the stomach.

operated upon. Upon opening her abdomen her stomach was examined and thought to be syphilitic. The entire stomach was involved from the cardiac to the pyloric end, including the anterior and posterior walls, the greater and lesser curvatures and extending down for several inches on the duodenum. The stomach walls were thick and gave a leathery feel. There was an absence of the usual well marked tumor recognized as cancer, and the enlargement that had been palpated was a general infiltration of the stomach walls. The peritoneum was red and glistening and gave more the appearance of an acute inflammation. It was impossible to do a gastro-enterostomy on account of the thickening of the stomach walls. Her abdomen was closed with a prognosis of early death. My experience with the cases reported prompted me to try salvarsan, despite the fact that a negative Wassermann

was reported. As soon as she had sufficiently reacted from the operation, she was given on August 1, 1917, six-tenths of gram of salvarsan intravenously. Positive provocative on the 2d. Up to the time of the operation she had lived for several months on liquid diet, which was not retained except in small amounts. August 5th, she was given soft diet, with light diet on the 7th, and all of which was retained and digested. On August 8th, she was given six-tenths of a gram of salvarsan intravenously and kept on soft diet. On August 12th, she was given general diet, and on August 14th the third dose of salvarsan, six-tenths gram. She left the sanatorium on August 15th, on general diet. Her bowels were acting normally. She had gained much in strength and appearance. She returned to her home, but I have been unable to follow this case with salvarsan or to persuade her to take anti-syphilitic treatment, even though she is as much improved.

Case 2, Mr. X, a salesman by occupation, age 33. Family history negative. Had the usual diseases of childhood, but no serious illness, except stomach trouble. Several years ago he had an initial lesion and was given salvarsan, when this lesion rapidly disappeared. This was followed by potassium iodide and mercury. Admitted to the hospital July 4, 1917; referred by Dr. W. A. Coleman. He was a patient of Dr. Geo. H. Fonde, of Mobile, Ala., to whom I am indebted for information in reference to his past history, and also for helping to diagnose his present condition. For several years he had suffered with "stomach trouble," with pain in epigastrium, becoming worse upon pressure; suffers much gaseous distension; constantly nauseated. Unable to retain food in stomach except small amounts of liquid. Pain is constant, but becomes much worse about thirty minutes after eating. In the last six months has vomited practically all nourishment, and has lost twenty pounds in weight. Suffers from eructation of gas, insomnia, headaches, pain in his extremities and backache, with occasional sharp lancinating pains in his legs. The second day after admission to the sanatorium there was a moderate hemorrhage from the bowels. He denies having ever vomited blood. States he has been an irregular eater on account of constant pain.

Upon physical examination heart, lungs

and kidneys are negative. A Wassermann test on July 6th was negative. Red cells 4,980,000; white, 8,000; polys, 68 per cent; hemoglobin, 93 per cent. X-ray plates were made, the picture seemed identical with plate 1. (As plates were sent to Dr. Fonde, I am unable to furnish a print.) I immediately wrote Dr. Fonde, who wrote that a short time before his blood showed a positive Wassermann. He was given six-tenths gram of salvarsan before coming to Atlanta. On July 9th, he was given six-tenths gram of salvarsan intravenously, kept on liquid diet until July 11th, and then he was given soft diet, which was kept up until July 16th, when he was given a second dose of six-tenths of gram of salvarsan intravenously. He improved rapidly, and on July 19th, was again on soft diet. On the 20th, on general diet, and left the sanatorium that day much improved in strength, weight and general appearance. He returned to Mobile. In a report from Dr. Fonde recently, he wrote that Mr. X improved for a time after he returned home, but would not consent to take another dose of salvarsan, or take other anti-syphilitic treatment. About one month after his return, did a posterior gastro-enterostomy, finding the gastric mucosa glistening, very atrophied in appearance. The oozing of blood from the entire surface within the clamps was sufficient to cause me to make application of carbolic acid with alcohol. There was no distinctive tumor, but a general infiltration of the entire stomach and intestines. From all examinations, both from a physical and laboratory standpoint, it is practically impossible to differentiate syphilis of the stomach and intestines from malignancy, unless we depend more upon the Wassermann test. With the number of cases that have been reported in the last few years, I am convinced that we should make more careful examinations, eliminate, if possible, these conditions being syphilitic before operations are undertaken. In one of my last cases a Wassermann test was negative. Notwithstanding the fact that her condition proved to be syphilitic afterwards. While the Wassermann test is not infallible by its more general use in many complicated conditions we will have a clearer insight into the real pathology.

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COUNTY HOSPITALS.*

By Dr. W. A. Chapman, Cedartown, Ga.

Mr. President, and Gentlemen of the Association:

At the last meeting of this Association I was placed on a committee to investigate the county hospital laws of different states and their operation. In making this report I would like to say a few words pertinent to the need of such institutions.

The fact that this committee was appointed by your body is an indication that many of you appreciate the growing necessity for small hospitals in counties with taxable values sufficient to justify the levying a tax for their erection and support.

These hospitals while erected with money out of the public funds, and caring for the charity patients of the county, yet would be largely maintained by receipts from pay patients.

Since our country entered into this righteous war with Germany, the War Department has been creating many large and wonderfully equipped hospitals for the care of our sick and crippled soldiers, and many will be made useful self-supporting citizens who otherwise would be helpless on the public.

This is right, and eminently just to the soldier; at the same time it is sound economy to preserve a useful citizen in lieu of an object of charity.

Now if our government is going to do all this, it is certainly up to the civil population to provide means to care for those who are left at home, and they are certainly de-

serving of the same care as the soldier at the front, and you may be sure that the soldier will do better service if he knows that the young wife expecting confinement will be properly cared for in a hospital, that the aged mother, dependent sister, and invalid father will be as well cared for in time of illness as he will be.

The army will take about twenty thousand physicians, physically sound, out of a total of about one hundred and fifty thousand now in civil practice, or who were in practice at the beginning of the war.

The standard of medical education is much higher than it ever has been, and rightly so.

This, with the further fact that so many available young men will be in the army, will prevent the entrance into the profession of the needed number of men to supply the places of those who die or otherwise become incapacitated.

Many of those who remain at home will be unable to sustain the burden physically, and a way must be provided to enable them to do the most work in the easiest manner.

The county hospital will largely help to do this.

In country districts the woman expecting confinement now has great difficulty in obtaining skillful monthly nurses to wait on her, and many a woman loses her life or her baby through the ignorance of some well-meaning neighbor.

Not long ago I lost a case of tetanus in a ten-day-old baby, and on inquiry found that the old lady who dressed the child had milked the cow just before, and had attended to the cord without washing her hands.

The establishment of a small, well conducted hospital in each county, with an up-to-date obstetrical ward, will mean much to the overworked doctor who does a large widely scattered work of this character, and will save many mothers and children, who otherwise are lost on account of so-called unavoidable accidents of pregnancy and confinement.

Would that we had a vital statistics law in operation so that I could quote you figures to show that I am right as regards the loss of life from neglect and ignorance in confinement cases.

The figures would make the whole state sit up and take notice. We can easily show in time to the expectant mother who lives remote in the country that she can get bet-

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ter service, that her life will be safer, and she will have greater assurance of a living child, that it will be less expensive, and that she will return to her home in sounder health than if she goes into her confinement in the haphazard way you so commonly see.

The physician who has one or many obstetrical cases on hand approaching confinement about the same time, and living remote from each other will sleep much sounder and sweeter at night if he has one or all in the county hospital, and will not have that dread of arriving just a little too late, because he knows that an interne or a good nurse will hold the fort until he gets there.

There is too great centralization of all hospital facilities in the large rural cities to the utter neglect of the small cities and rural communities.

You may say that the county hospital is not needed, that the city hospital can care for all.

The hospitals of Atlanta are crowded to overflowing today with patients who can well afford to pay hospital expenses, and greater facilities are needed.

Back in the small towns and country districts are a very much larger number who for many reasons will not reach the city hospitals.

The establishment of the small hospital, if properly conducted, will cause many of those who now go to the large cities to remain at home, will cause first-class young physicians to locate where they can have the benefit of hospital facilities, and where they can do better work, will relieve the congestion rapidly increasing in the large hospitals, and will enable the country communities to care for the many cases of charity who now never receive the proper attention.

The time is certainly coming when you will have to build the county hospitals, or enlarge or build more city hospitals.

If the first is done many more people will be served, and more lives will be preserved.

The highly trained physician of the future will not locate where he can not have the benefit of laboratory or X-ray service, for this to be of the greatest value must be on the spot.

To render the service now expected of him he must have the most modern methods of doing his work, and in this he is dependent on the hospital with its laboratory and X-ray apparatus.

In seeking information for our committee I have secured the county hospital laws of Indiana, Iowa and Missouri, which have been kindly sent to me by officials of those states, together with other matter of interest on the same subject.

The Indiana and Iowa laws are very similar, and have resulted in the erection of hospitals now doing good service.

One of these, the Bartholomew County Hospital, in Columbus, Ind., was built at a cost of one hundred thousand dollars (\$100,000.00), the limit allowed by law. The money raised by an issue of bonds, payable in twenty years or less time, and payment provided for by a special hospital tax of two (2) mills assessed against the county values for not more than twenty years.

Columbus, the county seat, has about one-third the population of Rome, and the taxable values of the county are no greater than the county of Floyd.

There are many good things in the laws of both of these states which we should avail ourselves of when we seek to pass a similar law.

We had hoped to have a bill drawn to submit for your approval, before asking our representatives to introduce it for passage at the next session of the state legislature, but unfortunately there is a serious stumbling block.

This is section 6562, paragraph 2, code of Georgia, reading as follows: "Taxing powers of counties limited."

"The General Assembly shall not have power to delegate to any county the right to levy a tax for any purpose, except for educational purposes in instructing children in the elementary branches of an English education only; to build and repair the public buildings and bridges; to maintain and support prisoners; to pay jurors and coroners, and for litigation, quarantine, roads and expenses of courts; to support paupers, and pay debts heretofore existing; to pay the county police and to provide for the necessary sanitation."

Your committee hopes that you may see fit to recommend that a bill be introduced to change the constitution of the state of Georgia at the next session of the legislature, by amending the paragraph after "for the necessary sanitation" to read "and for the erection and maintenance of county hospitals."

We would ask that this recommendation be made to the Medical Association of Georgia at their next annual meeting in Savannah next month, and that each and every member of this Association seek to show our State Association the necessity for this change, and the need for the county hospital in the South.

We must remember that the states of the Middle West are progressive and modern, and that we have got to teach our people the need for this change, for we have much ignorance to contend with.

I regret to say that the percentage of illiteracy is too high in Georgia, and the sooner we realize this the better for us; no good result is accomplished by trying to hide this fact.

Recently in my county, one of the representative counties of the state, one hundred and fifty young men out of six hundred who came up for examination before the local draft board could neither read nor write. This was an actual count.

If we wish to pass a bill to change the constitution of the state for the purpose of having county hospitals, we have simply got to get out and teach the people their own need.

NINTH DISTRICT MEDICAL SOCIETY MEETING.

The Ninth District Medical Society met at Tooeoa, March 10th, and was a most pleasant and profitable occasion.

The attendance was up to the average, and the interest fine. The scientific program was as follows:

"Oral Cavity in Relation to Systemic Infection"—Dr. J. R. Simpson, Gainesville.

"Co-operation Between the Doctor and Dentist"—Dr. J. L. Harrison, Gainesville.

"Treatment of Burns and Varicose Ulcers With Wax Dressing"—Dr. C. W. Larrabee, Helen.

"Treatment of Broncho-Pneumonia in Children"—Dr. H. L. Rudolph, Gainesville.

"Report of Interesting Surgical Cases"—Dr. J. H. Downey, Gainesville.

"The Relation of the State Tuberculosis Sanitarium to the General Practitioner"—By Dr. W. C. Schroeder, Alto.

These papers were all well prepared and were discussed freely by almost every one present.

At the noon hour, a splendid luncheon was served by Stephens County Society. Ample justice was given to this repast, which was served by the fair ladies of Tooeoa.

Officers for ensuing year were elected, viz.: President—Dr. C. L. Ayers, Tooeoa.

Vice-President—Dr. J. H. Crawford, Martin.

Secretary and Treasurer—Dr. A. D. White, Gainesville.

The next meeting of the Society will be at Gainesville, September 18, 1918.

A vote of thanks was given the doctors of Stephens County and the ladies and citizens of Tooeoa, who, by their presence and many courtesies shown, added so much to the pleasure of the occasion.

NOTICE.

Relative to the meeting of the State, County and Municipal Health Officers' Association that will be held on the first day of the meeting of the State Association instead of the day prior to the state meeting as heretofore. I will appreciate your giving this meeting such publicity as you see fit in the April journal, inviting all parties interested in public health work to meet with us.

DO YOU KNOW THAT

The only good fly is the dead one?

Universal public health service is the duty of the Nation?

Good health is the foundation of personal usefulness either in peace or in war?

He who is too busy to care for his health may have to take time to cure disease?

Much valuable food material is diverted in the manufacture of alcoholic beverages?

The more money The Journal of the Medical Association of Georgia makes out of its advertisements the less it costs the State Association to run the paper. This means that every member of the State Association has an interest in the advertising columns. If one business firm advertises and another does not, patronize the one that does. It is money in your pocket.

An advertisement in The Journal of the Medical Association of Georgia will bring results. Rates sent on request.

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Advertising forms go to press eight days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the council. Advertising rates will be sent on request.

CONTRIBUTIONS

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors should have their contributions typewritten—double space and with ample margin—before submitting them. The expense is small to the author—the satisfaction is great to the editor and printer. We cannot promise to return unused manuscript, but try to do so in every instance. Manuscript should not be rolled or folded.

ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

PROGRAM.

Sixty-ninth Annual Session, Savannah, Ga.,
April 17, 18, 19, 1918.

INFORMATION.**Headquarters.**

The De Soto Hotel

State and Municipal Health Officers.

This Association will hold its Annual Meeting at the De Soto Hotel Wednesday night.

Committee for Medical Preparedness.

A meeting of the State Committee, together with members of the District Committees for Medical Preparedness, will be held at the Savannah Theater, Thursday evening at 8:00. All medical officers of the National Guard or of the Reserve Forces, to-

gether with members of the Association who desire to apply for commissions in such forces, are invited. Distinguished Medical Officers, representing the American, British and French Armies, have been detailed by the Surgeon-General to attend this meeting, and patriotic addresses will be made by several well-known speakers. It is urged that all Medical Officers in attendance appear regularly in uniform.

Membership Cards.

In order to facilitate registration it is urged that every member be prepared to show his membership card at the registration desk, where badges will be provided.

No member will be allowed to participate in the meeting unless provided with an official badge.

Entertainment.

The Annual Dinner of the Ophthalmological Club will be given Wednesday evening.

The Pediatricists of the state are invited to attend an informal dinner and discuss organization Wednesday evening.

Meeting of Council.

The Annual Meeting of the Council will be held Tuesday evening preceding Association meeting, at De Soto Hotel.

Wednesday Morning, April 17th.

Meeting of House of Delegates at 9:30 O'clock.

Meeting called to order at 10:30 by President:

E. E. Murphey, M.D., M.R.C., Augusta.

Invocation:

Rev. Wm. N. Ainsworth.

Address of Welcome on Behalf of City:

Hon. W. J. Pierpont, Mayor, City of Savannah.

Address of Welcome on Behalf of Local Profession:

H. H. Martin, M.D.

Response to Addresses of Welcome.

W. S. Goldsmith, M.D., Atlanta.

Report of House of Delegates.**PAPERS.****1. "Children's Work in War Time."**

Frances S. Bradley, M.D., Tifton.

2. "The Value of a Commission for the Study and Control of Cancer."

J. L. Campbell, M.D., Atlanta.

3. "The Control of Cancer."
Geo. R. White, M.D., Savannah.
4. "Ectopic Pregnancy; With Presentation of Specimen; Unruptured."
Garnett W. Quillian, M.D., Atlanta.
5. "Caesarian Section—A Midget."
R. C. Woodard, M.D., Adel.
6. "A Plea for the Conservation of Human Milk."
W. L. Funkhouser, M.D., Atlanta.
7. "Babies, Malaria and Quinine."
W. A. Mulherin, M.D., Augusta.
8. "Collo Cell. A New Surgical Dressing and Drainage. A Radical Departure in Surgical Dressings. A Demonstration."
St. Joseph B. Graham, M.D., Atlanta.

RECESS.

Wednesday Afternoon, 3:00.

9. "Diagnosis and Treatment Gastric Ulcer."
J. T. Rogers, M.D., Savannah.
10. "Syphilis Versus Cancer of the Stomach."
Geo. M. Niles, M.D., Atlanta.
11. "An Operation — Unique—Having Been Performed but Once."
12. Direct Alcoholization of the Sensory Root of the Fifth Nerve in the Treatment of 'Tic Douloureux.'"
H. H. Martin, M.D., Savannah.
13. Traumatic Wounds of the Eye, With Report of a Case."
M. M. Stapler, M.D., Macon.
14. "Recent Clinical Laboratory Developments."
E. C. Thrash, M.D., Atlanta.
15. "Papillomata of Gall Bladder and a Case of Anastomosis of Biliary Sinus to Intestine."
T. P. Waring, M.D., Savannah.
16. "Prostatectomy."
W. L. Champion, M.D., Atlanta.
17. "Earache and Deafness."
A. B. Mason, M.D., Waycross.
18. "Plastic and Cosmetic Surgery."
E. D. Highsmith, M.D., Atlanta.
19. "Vital Statistics."
A. L. R. Avant, M.D., Savannah.
20. "Roentgen Diagnosis in Cases of Empyema Simulating Other Diseases. Lantern Slides."
W. A. Cole, M.D., Savannah.

THURSDAY MORNING, 9:30.

Report of House of Delegates.

21. "Writer's Cramp."
Theodore Toepel, M.D., Atlanta.
22. "A New Incision for the Surgery of the Gall Bladder and Duct."
Charles Usher, M.D., Savannah.
23. "Treatment of Lobar Pneumonia."
J. W. Palmer, M.D., Ailey.
24. "Ten Years' Experience in the Treatment of Pneumonia."
S. T. R. Revell, M.D., Louisville.
25. "Some Interesting Nasal Cases, Probably Due to Syphilis."
Dunbar Roy, M.D., Atlanta.
26. "Laparotomy of the Knee Joint."
Walter Norton, M.D., Savannah.
27. "The Tragic Complications of Stomach and Duodenal Ulcers."
E. G. Jones, M.D., Atlanta.
28. "Acidosis Associated With Infections of the Air Passages. A Clinical Report of Forty Cases."
A. J. Waring, M.D., Savannah.
29. "Mental Disturbances Caused by Syphilis."
Lewis M. Gaines, M.D., Atlanta.
30. "Goiter. End Results in Seventy Operated Cases."
W. S. Goldsmith, M.D., Atlanta.

RECESS.

Thursday Afternoon, 3:00.

31. "A New Method of Applying Heat in the Treatment of Interstitial Keratitis."
J. Lawton Hiers, M.D., Savannah.
32. "Arsenic in the Treatment of Skin Diseases."
Cosby Swanson, M.D., Atlanta.
33. "Internal Glandular Secretions in Relation to the Eye."
Elton S. Osborne, M.D., Savannah.
34. "The Proper Role of Surgery in Digestive Disturbances With Illustrated Cases."
C. W. Roberts, M.D., Atlanta.
35. "The Syphilis Clinic of Emory University, Atlanta, Ga."
W. B. Emery, M.D., Atlanta.
36. "Ureteral Stones—Their Removal by Aid of the Operating Cystoscope. Report of Cases."
E. P. Merritt, M.D., Atlanta.

37. "Demonstration of the Surgical Anatomy of the Accessory Sinuses of the Nose."

J. T. Maxwell, M.D., Savannah.

38. "Appendicitis."

L. C. Fischer, M.D., Atlanta.

39. "Post-Operative Treatment of Gynecological Cases."

Marion T. Benson, M.D., Atlanta.

RECESS.**Patriotic Meeting Savannah Theater, Thursday Evening, 8:30.**

1. Opening Chorus—"America."
2. Recitation of the "American Creed."
3. Introductions by Major E. E. Murphey, President of the Medical Association of Georgia.
4. Address, Honorable Anton P. Wright, Savannah.
5. Address, Colonel Derele, French Medical Service.
6. Address, Colonel Morgan, British Medical Service.
7. Address, Colonel Bushnell, American Medical Service.
8. Address, Major Seale Harris, American Medical Service.
9. Music.

Friday Morning, 9:30.

40. "Tuberculosis in the Army." Colonel George E. Bushnell, Medical Corps, United States Army.
41. "Sanitation in France." Colonel Charles U. Derele, Medical Service, French Army.
42. "British Army Organization for the Evacuation of Sick and Wounded." Colonel C. K. Morgan, Medical Service, British Army.
43. "Gastro-Intestinal Diseases in the Army." Major Seale Harris, Medical Reserve Corps, United States Army.

44. "Base Hospital Service at Cantonments."

Lt. C. K. Sharpe, Medical Reserve Corps, United States Army.

45. "Examination of Registrants for Service."

Major W. C. Lyle, Medical Reserve Corps, United States Army.

46. "Examination of Soldiers for Discharge."

Major E. E. Murphey, Medical Reserve Corps, United States Army.

47. "A Torn Cervix Versus Uterine Inertia."

Eugene R. Corson, M.D., Savannah, Ga.

Friday Afternoon, 3 O'clock.**Election of Officers.**

President.

First Vice-President.

Second Vice-President.

Delegates to A. M. A.

Alternates.

Councillors for

Fifth District. Seventh District.

Sixth District. Eighth District.

Organization of Council.**PROGRAM FOR MEETING OF HOUSE OF DELEGATES.****Wednesday Morning, April 17th, 9:30****O'clock, De Soto Hotel.**

Call to order by President.

Enrollment of Delegates.

Report of Committees.

Thursday Morning, 9 O'clock.

Call to order by President.

Report of Committees.

Report of Delegates to A. M. A.

Report of Council.

Unfinished Business.

New Business.

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The Pollen Extract may be used without preliminary diagnostic tests, Spring Hay Fever being caused mostly by the pollen from grasses.

Hay Fever Spring Pollen Extract is furnished as follows:

- No. 0—In packages of four sterile syringes, A, B, C, D strength
- No. 4—In 20-ml vials, each ml strength of Syringe D
- No. 9—In 5-ml " " " " " " D
- No. 11—Single syringe, D strength
- No. 12— " " " " E "
- No. 14— " " " " F "

Syringe A contains	0.0025	mg. pollen protein nitrogen				
" B "	0.005	" " " "	"	"	"	"
" C "	0.01	" " " "	"	"	"	"
" D "	0.02	" " " "	"	"	"	"
" E "	0.04	" " " "	"	"	"	"
" F "	0.08	" " " "	"	"	"	"

For Immunization and Treatment of Hay Fever, first dose (Syringe A) should be given at least 30 days before expected attack, followed by B, C and D at five-day intervals. Syringe D strength Hay Fever Pollen Extract should be used at weekly intervals during the entire period of accustomed attack or until immunity is established.

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